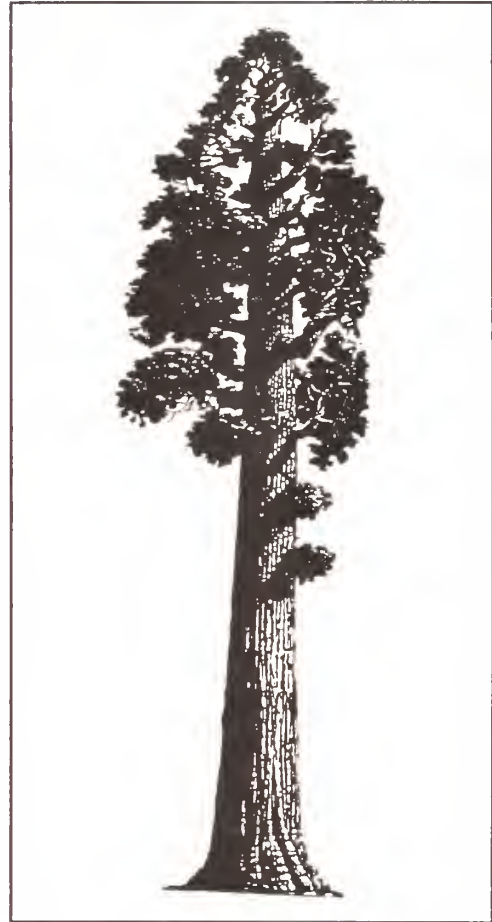


Interim Management Plan  
Finding of No Significant Impact



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Giant Forest  
**SEQUOIA**  
National Park • California



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# United States Department of the Interior

NATIONAL PARK SERVICE  
Sequoia and Kings Canyon National Parks  
Three Rivers, California 93271

IN REPLY REFER TO:

L7617

April 17, 1996

Dear Park User:

The National Park Service is pleased to announce that the Interim Management Plan for the Giant Forest area of Sequoia National Park is now complete.

This plan will guide management of the Giant Forest sequoia grove and its immediate surroundings for the next ten to twenty years. During this period the grove will see major changes including the removal of the commercial facilities, the conversion of the grove to a day-use-only visitor area, and the ecological restoration of previously disturbed areas.

During the preparation of this plan the National Park Service conducted twenty-one public meetings and received over 250 written comments. Many of you are receiving this plan because you took part in the planning process.

We firmly believe that the comments received contributed greatly to the strength of this plan. The final version incorporates many of the comments received, particularly with regard to the location of parking areas within the grove and the role of transportation systems.

The National Park Service appreciates the time and energy each of you invested in this effort. It is our hope that you will find that the new management directions defined in the plan are beneficial to both the natural resources and visitors in this special place.

Michael J. Tollefson  
Superintendent

Enclosure



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Interim Management Plan  
Finding of No Significant Impact

April 1996

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Giant Forest  
**SEQUOIA**  
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## INTRODUCTION

The *Giant Forest Interim Management Plan* provides an outline for the management of the Giant Forest area of Sequoia National Park, California, for the next 10–20 years. During that time visitors to the area will see profound change as century-old concession facilities are closed and removed and the area is converted to day use only. At the same time an extensive program of ecological restoration will be carried out.

The period of interim management described in this plan is intended to lead ultimately to the full implementation of the 1980 *Giant Forest/Lodgepole Development Concept Plan*. The 1980 plan is described in more detail in the “1980 *Development Concept Plan — A Vision for the Future*” section.

Preceding the section that discusses the 1980 plan is a map of the existing conditions and a definition of Giant Forest place names. Readers who are not familiar with the area will find this information helpful.

The “Plan for the Interim Management of Giant Forest” section explains the intended course of action, and the “Impacts of the Plan” section presents a full analysis of the plan’s environmental consequences.

The section entitled “Discussion” provides background on why certain key elements of this plan were chosen, and the “Public Comment Summary” section presents a synthesis of nearly 300 public comments received in response to a *Draft Environmental Assessment* issued on this subject in July 1995.

Finally, the “Finding of No Significant Impact” (appendix A) documents why this plan will not have a significant effect on the human environment and why an environmental impact statement need not be prepared.

## DEFINITION OF GIANT FOREST PLACE NAMES

This document discusses a geographical area in detail and uses a number of place names, which may have different meanings to different people. To minimize any confusion in this plan, the Giant Forest place names are clearly defined as they are used in this plan (refer to the Existing Conditions map for specific locations).

**Beetle Rock Center** — A classroom building in upper Kaweah; also known as the Beetle Rock recreation hall.

**Crescent Meadow** — A wetland at the end of the Moro Rock/Crescent Meadow road; area includes a parking area and trailhead.

**General Sherman Tree** — The largest tree by volume in the world also referred to as Sherman Tree; area includes parking and trails.

**Giant Forest** — A grove of giant sequoias covering about 3 square miles and including many subordinate sites such as General Sherman Tree, Round Meadow, Giant Forest Center, and Crescent Meadow.

**Giant Forest Center** — A new name for the development zone proposed in this plan in the western part of Giant Forest. Giant Forest Center includes the Giant Forest museum, Beetle Rock Center, and the adjoining parking areas to be constructed in upper and lower Kaweah. Giant Forest Center supersedes the names Giant Forest Village, upper Kaweah, and lower Kaweah, which will be retired.

**Giant Forest Lodge** — An area of concessioner development on the east side of Round Meadow. This development is being removed and the name will be retired.

**Giant Forest Museum** — A new name; the interpretive facility to be installed within the historic Giant Forest Village market building. The Giant Forest museum is one of the features of Giant Forest Center.

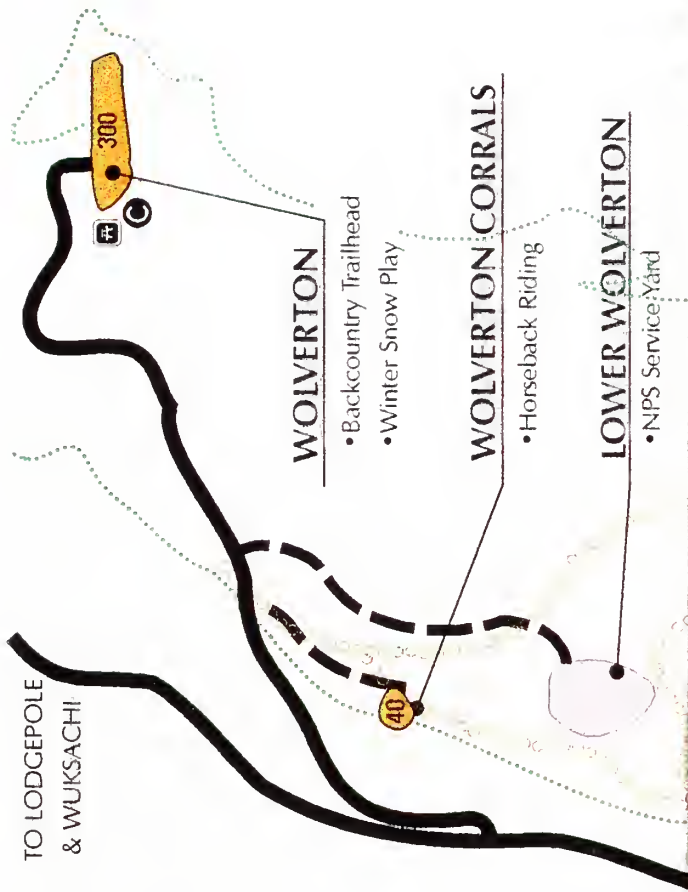
**Giant Forest Village** — An old name for the commercial development along the Generals Highway at the Moro Rock road junction. Most of this development is being removed, and the area will become a part of Giant Forest Center.

**Hazelwood** — An area on the south side of the Generals Highway across from the Giant Forest Lodge; contains a self-guiding nature trail.

**Lower Kaweah** — An old name for a rustic cabin complex adjacent to upper Kaweah. This area will become a part of Giant Forest Center.

**Lower Wolverton** — Located just outside the northern corner of Giant Forest near General Sherman Tree; currently the site of an NPS service yard. A new parking area to provide access to General Sherman Tree will be constructed here.





## GIANT FOREST EXISTING CONDITIONS

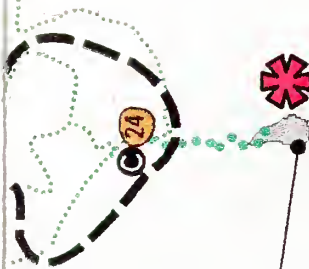
# SEQUOIA NATIONAL PARK

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### MORO ROCK

- Hiking Destination



### Legend

- Year-Round Road
- Summer/Shoulder Season Road
- Primary Pedestrian Trail
- Secondary Pedestrian Trail
- Handicapped Accessible Trail
- Horse Trail
- Parking Area (number of spaces)
- Existing Concession Development
- Former Campgrounds/Picnic Areas
- NPS Service Area
- Comfort Station
- Granitic Outcrop
- Cultural Features
- Primary Visitor Destination

MILES

1/2

1

METERS

500

1000

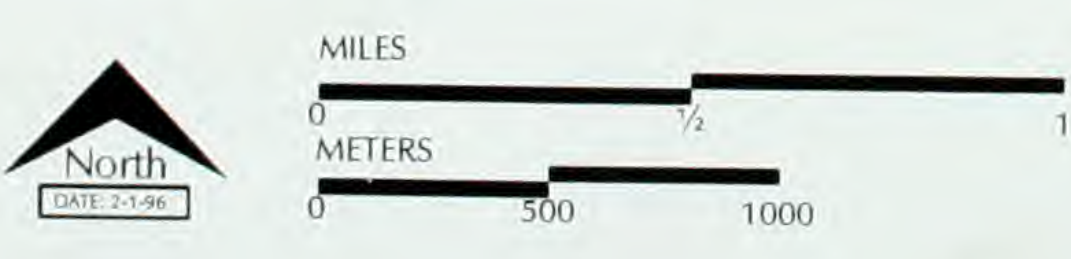
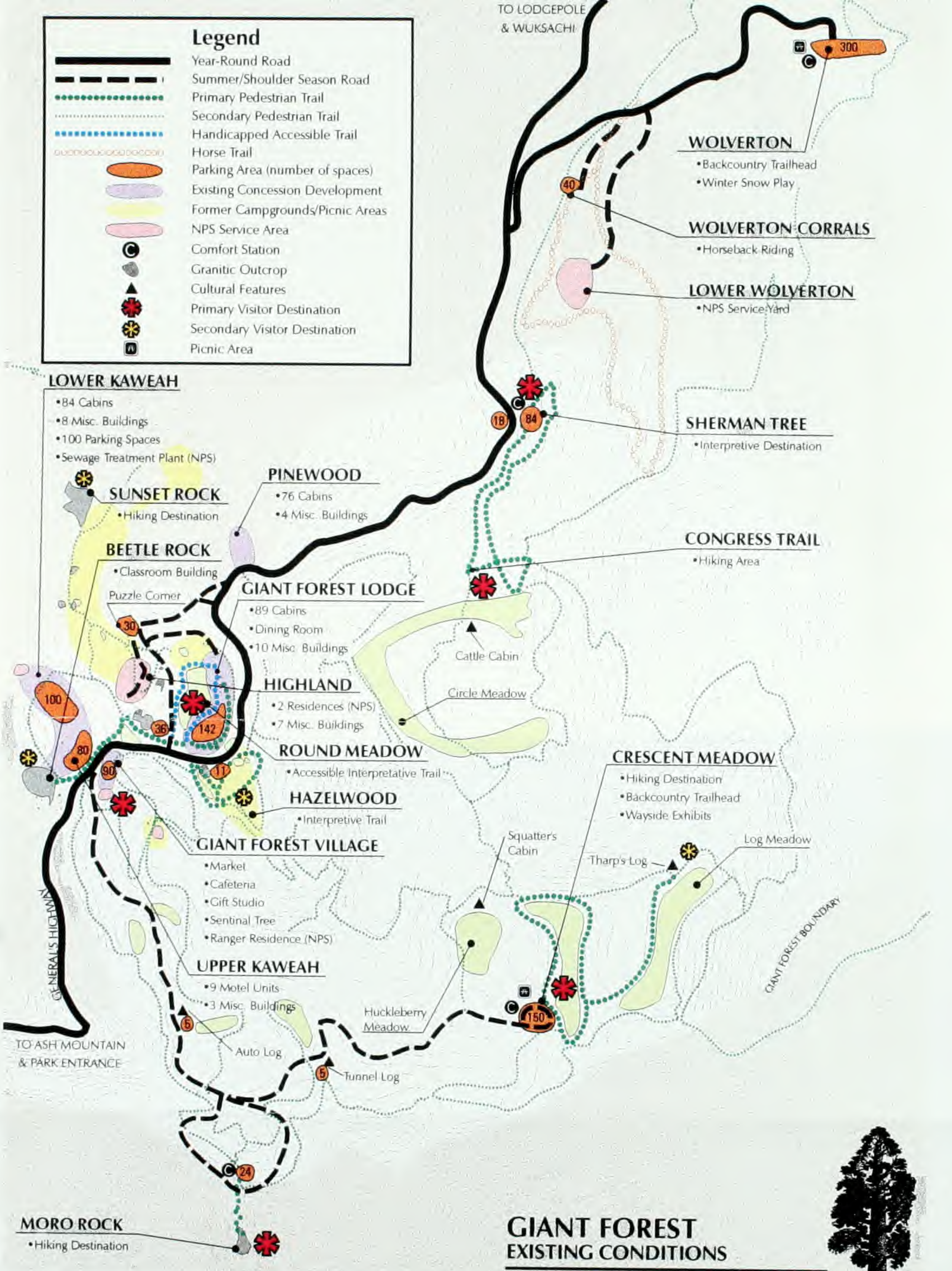


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- Year-Round Road
- Summer/Shoulder Season Road
- Primary Pedestrian Trail
- Secondary Pedestrian Trail
- Handicapped Accessible Trail
- Horse Trail

- Parking Area (number of spaces)
- Existing Concession Development
- Former Campgrounds/Picnic Areas
- NPS Service Area
- Comfort Station
- Granitic Outcrop
- Cultural Features
- Primary Visitor Destination
- Secondary Visitor Destination
- Picnic Area



GIANT FOREST  
EXISTING CONDITIONS

SEQUOIA  
NATIONAL PARK

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**Moro Rock** — A geological feature on the southern edge of Giant Forest; a parking area and trail are present.

**Pinewood** — A site on the western shoulder of the Generals Highway about 1 mile north from Giant Forest Center; will become the site of a new picnic area.

**Round Meadow** — A wetland near Giant Forest Lodge; area currently includes parking and the "Trail for All People," which circles the meadow.

**Sunset Rock** — A geological outcrop on the western edge of Giant Forest; also the adjoining site of an old campground.

**Wolverton** — The parking trailhead and picnic area at the end of the Wolverton road; previously the site of the Wolverton ski area. Referred to in other documents as "upper Wolverton."

**Upper Kaweah** — An existing concessioner development on the opposite side of the Generals Highway from Giant Forest Village; includes Beetle Rock Center. In the future this area will become a part of Giant Forest Center.

## THE 1980 DEVELOPMENT CONCEPT PLAN — A VISION FOR THE FUTURE

Giant Forest, a grove of giant sequoias, is the best known and most visited feature of Sequoia National Park. The Giant Forest grove contains the world's largest living trees.

In February 1980 the National Park Service completed work on the *Giant Forest/Lodgepole Development Concept Plan*. This plan called for significant changes in the nature and location of visitor services in the park.

The 1980 plan was motivated by a broadly supported public understanding that the continued presence of large-scale visitor infrastructure in the Giant Forest sequoia grove was no longer sustainable. This realization came about during a planning effort that began in the early 1970s. In 1971 the National Park Service issued a new *Master Plan* for Sequoia and Kings Canyon National Parks. This plan recognized the problems associated with Giant Forest, but did not resolve those problems. A subsequent planning effort in the middle 1970s, which included extensive public meetings, determined that commercial facilities could not be retained in the Giant Forest without continued damage to the forest's priceless ecosystem. The planning effort also determined that the public would support relocation of the grove's lodges to a new location outside the giant sequoia area.

Pursuing the ultimate goal of protecting the Giant Forest, the 1980 *Development Concept Plan* contained the following key provisions:

- Over a 10-year period Giant Forest would be converted to a day use only area.
- All structures in the Giant Forest Village, upper and lower Kaweah, Giant Forest Lodge, and Pinewood areas would be removed except for the market building, comfort station, and ranger residence.
- All parking associated with these facilities would be removed except for 55 spaces at Giant Forest Center to serve the visitor contact station during shoulder seasons and winter.
- The Giant Forest market building would be converted into a visitor contact station for interpretive purposes.
- A major ecological restoration effort would mitigate the effects of past development in the grove.
- The Generals Highway would remain open through the grove, but all summer parking would be removed from the area and concentrated in a 1,700-vehicle staging area in the Wolverton area; the Moro Rock/Crescent Meadow road would be closed to private vehicles during the summer.
- Summer visitors would be transported from the staging area to the features of Giant Forest by way of shuttle system that would utilize existing roads.
- When the shuttle was not operating during the off-season, visitors would be allowed to park in Giant Forest and drive to Moro Rock and Crescent Meadow; the existing parking

areas at Moro Rock and Crescent Meadow would be preserved for this use, as well as 55 parking spaces at Giant Forest Center to serve the museum.

- A new commercial area outside the grove would be developed at Clover Creek; this site is now known as Wuksachi Village.

Since fiscal year 1984 line-item construction funding has been allocated annually to this project. As a result, Wuksachi Village is now essentially ready for concessioner development. At the same time, an agreement has been signed with the California Regional Water Quality Control Board promising that the last commercial facilities in Giant Forest will close at the end of the 1998 summer visitor season. For these reasons, beginning in 1993, the National Park Service turned its attention to the implementation of the Giant Forest elements of the 1980 *Development Concept Plan*.

Because of the cost, magnitude, and complexity of the work to be undertaken, it became apparent that full implementation of the 1980 plan would require an additional 10–20 years. The biggest single obstacle slowing full implementation is the immense increase in general construction costs over the past 15 years and the parallel reduction of available government construction funding.

For all of these reasons the National Park Service has concluded that it is necessary to develop an interim management plan for Giant Forest that would (1) substantially reduce investment needed in the near future, (2) achieve, as quickly as possible, a majority of the 1980 plan's critical goals, and (3) leave the Park Service in an enhanced position to achieve full implementation of the 1980 plan when funding becomes available at some future date.

Public exploration of issues related to the interim management of Giant Forest began in July 1995 when the National Park Service issued *Alternatives for Interim Management and Draft Environmental Assessment, Giant Forest, Sequoia National Park*. This draft document offered three distinct alternatives for the interim management of Giant Forest, invited public comment, and noted that the final plan would likely consist of a combination of elements from these several visions.

This document — *Giant Forest Interim Management Plan* — synthesizes elements explored in the 1995 draft and includes a Finding of No Significant Impact (FONSI) statement, which completes the environmental compliance process begun with the 1995 draft plan.

Both the 1995 draft plan and this final plan assume that all commercial facilities in Giant Forest will be closed and removed, as called for in the 1980 *Development Concept Plan*. For this reason, both documents begin with the question of "what next?"

## PLAN FOR THE INTERIM MANAGEMENT OF GIANT FOREST

This section contains the specific elements of the *Giant Forest Interim Management Plan*. To facilitate comparison with the alternatives explored in the 1995 draft plan, the same outline of presentation is followed.

Because the actions called for in this final plan are complex and interlocking, they will be carried out in a phased work program extending over a number of years.

### PURPOSE

This final plan seeks to improve existing conditions in the sequoia grove and move closer to eventual full implementation of the 1980 *Development Concept Plan* (see Interim Management Plan map). Visitor experiences will be improved by enhancing quality park-based opportunities and removing distractions. Peak season access will be maintained to all existing features, but access will shift in character and in some cases, including Moro Rock and Crescent Meadow, will be limited. Visitor emphasis will be shifted away from features that have been identified as vulnerable to increasing visitation. New emphasis will be placed on areas that can best sustain visitation while providing quality visitor experiences. The grove will continue to be the primary feature of Sequoia National Park and will continue to be available to large numbers of visitors.

### VISITOR EXPERIENCE

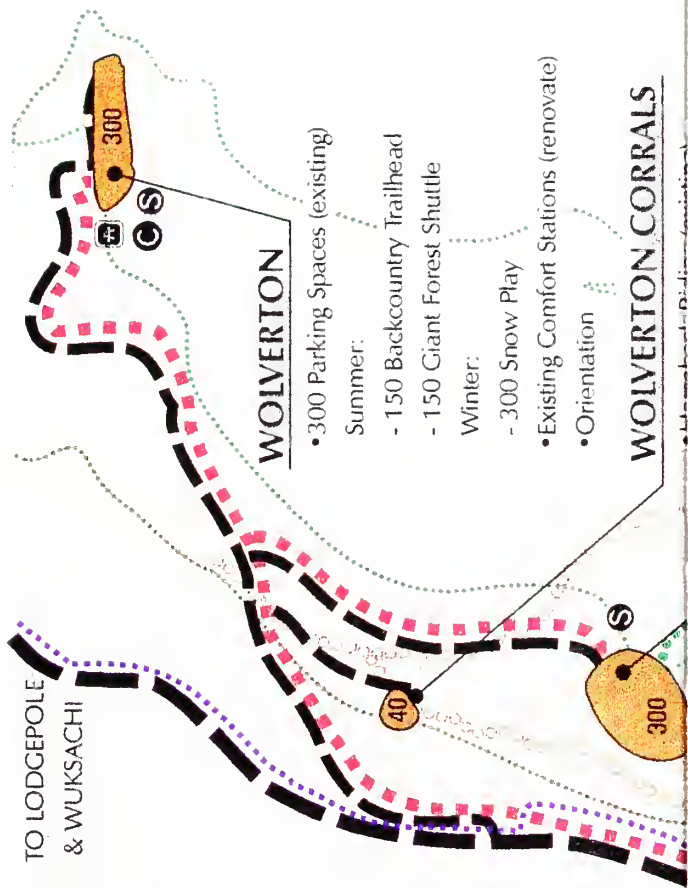
Giant Forest, with its amazing trees, will retain its role as the best known and most visited feature of Sequoia National Park. Visitors will continue come to the grove to see the sequoias and their ecosystem and will be able to get out of their vehicles and directly experience the wonders of Giant Forest.

#### Access

**Focus.** Visitor experiences will be focused in three areas. The northwestern quarter of the grove and the Giant Forest Museum and connecting nature trail system leading to Round Meadow and vicinity will provide a basic introduction to the primary features of Giant Forest, including its giant sequoias, meadowlands, and human history. A second primary visitor focus area will feature General Sherman Tree and adjoining trails. This area, with the natural focal point of the world's largest tree, will also provide an opportunity for a basic understanding of the giant sequoia forest. The third focus area will feature Moro Rock, with its expansive scenic vistas, and Crescent Meadow and its trail system. This area will be accessible during peak season only by shuttle system, by bicycle, or on foot.

An additional visitor focus site will be created in the form of the Pinewood picnic area; however, this site will emphasize recreational picnicking not park features.





# GIANT FOREST INTERIM MANAGEMENT PLAN

## SEQUOIA NATIONAL PARK

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**Roads.** The Generals Highway will be retained in its current form and function. The Moro Rock/Crescent Meadow road will also be retained in its current physical configuration but will be converted to a shuttle-only route during peak season. When the Moro Rock/Crescent Meadow road is closed to private vehicles, it will continue to be open to bicycles. This will provide a 6-mile round-trip bicycle route from Giant Forest Center to Moro Rock to Crescent Meadow and then back. Private vehicles will be allowed to drive to Moro Rock during shoulder season periods when the shuttle system is not operating.

An existing service road will be improved to provide access to new parking at lower Wolverton. The Round Meadow/Puzzle Corner road will be closed and removed, as will the abandoned road system in the old campgrounds north of Puzzle Corner.

**Parking.** Major changes will occur in the grove's parking pattern. Most parking will be directed to three areas — upper and lower Kaweah, lower Wolverton, and Wolverton. The upper and lower Kaweah areas will be reconstructed for day use parking to primarily serve the Giant Forest museum and the adjoining interpretive trail system. New parking will be provided at lower Wolverton, along with a new 0.25-mile trail that will link the parking area with General Sherman tree. The existing parking at Sherman Tree will be removed. Additional space at lower Wolverton will provide parking for shuttle users. Existing parking at Wolverton primarily serves back-country hikers. The shuttle will make the extra parking spaces available to Giant Forest day users.

Parking at Crescent Meadow and Tunnel Log will be removed, and access to Moro Rock parking and Auto Log parking will be limited to when the road is open in the shoulder season. Small parking areas for visitors with disabilities will be reconstructed near the Giant Forest museum, the Round Meadow/Hazelwood area, and the Sherman Tree. The Pinewood picnic area will have parking for the new picnic sites.

When all interim parking is complete and the shuttle is operating, there will be a total of 760 parking spaces for Giant Forest day users. Of those, about 500 spaces are within 0.25-mile or less of features in the grove. A total of up to 530 parking spaces may be available for winter use, including the Wolverton snow play area.

**Shuttles.** When fully developed, two shuttle lines will provide transportation for Giant Forest visitors. The primary purpose of the shuttle system is to facilitate visitor experiences within the grove while at the same time reducing infrastructure requirements, particularly parking, within the grove's more fragile areas.

The lodging shuttle will connect overnight accommodation areas at Wuksachi Village and Lodgepole campground with the Giant Forest museum. If desired this shuttle could also serve the General Sherman Tree, which is en route. The lodging shuttle will allow overnight visitors to Sequoia National Park to visit Giant Forest without bringing their vehicles to the grove.

The "day use shuttle" will connect the grove's major features and parking areas with additional parking at Wolverton. The shuttle will run from Wolverton to Crescent Meadow, with intermediate stops possible at lower Wolverton, General Sherman Tree, the Round Meadow/Hazelwood area, Giant Forest museum, Moro Rock, and Crescent Meadow. The purpose of the day use shuttle is to facilitate seeing the grove by connecting various features, trails, and parking areas.

Shuttle services will be accessible to visitors with disabilities. Shuttle stops will be constructed to provide full visitor access to both shuttle vehicles and adjoining park features.

Shuttle services will operate initially only during peak season. Off-season shuttles may be operated in the future if economics allow. When shuttles are not operating, visitor access will be adjusted as described in the "Parking" section.

Park visitors will pay fees adequate to support the shuttle system. Costs associated with the shuttle will either be added to park entry fees or charged only to those visitors using the shuttle when boarding.

**Trails.** The overall system of trails connecting features in Giant Forest will be retained. Improvements will be made to reflect the focus areas, tie to new patterns of parking, and provide increased access for visitors with disabilities.

At Giant Forest Center an enhanced system of fully accessible trails will be developed connecting the museum and the Round Meadow/Hazelwood area. The Trail for All People will be improved and incorporated into a system of interpretive trails near Round Meadow. An upper trail from lodge parking areas 3 and 4 will be studied for inclusion. Old roads and campground loops will be studied for inclusion in a system of trails connecting the Sunset Rock trail to other features west of the Generals Highway. The upper and lower Kaweah parking areas will be connected to this system and to the Giant Forest museum.

Trail access to Sherman Tree will be developed from the lower Wolverton parking area. It will be about 0.25-mile long, with grades of up to 10% and rest stops with interpretive exhibits. A more rugged return route will follow Sherman Creek to the lower Wolverton parking area. A fully accessible trail will connect Sherman Tree parking with the shuttle stop, comfort station, and Sherman Tree.

Trail connections between Wolverton and lower Wolverton will be examined to possibly improve the circulation of hikers and shuttle users in Giant Forest. The Congress Trail loop may be redesignated for pedestrian use only, which will create a new loop trail that will begin and end at the new parking area.

At Crescent Meadow a segment of trail will be identified and improved to provide visitors with disabilities access to the meadow.

**Backcountry Access.** Both Wolverton and Crescent Meadow will continue to function as backcountry trailheads. At Wolverton trailhead the 300 site parking area will remain. Trailhead parking at Crescent Meadow will be phased out. Hikers will then have the choice of accessing Crescent Meadow via the day use shuttle or shifting their point of origin to Wolverton. Overnight parking will not be allowed at Giant Forest Center.

**Access for Visitors with Disabilities.** All new and renovated comfort stations will provide access for visitors with disabilities. All new and reconstructed parking areas will include spaces designated for visitors with disabilities. The Pinewood picnic area will have fully accessible sites. The shuttle system will be accessible to visitors with disabilities. Fully accessible interpretive trails will be constructed at General Sherman Tree, Crescent Meadow, and the Round Meadow/Hazelwood area. The Giant Forest museum will be accessible to visitors with disabilities.

**Winter Access.** Winter access to Giant Forest is constrained by seasonal conditions. The Generals Highway through the grove will continue to be cleared of snow and kept open for public use.

At Giant Forest Center winter parking will be maintained in the form of about 100 sites in the upper Kaweah area; the lower Kaweah parking area will be closed during the snow season. Existing ski trails leading from Giant Forest Center to Moro Rock, Crescent Meadow, Congress Group, and Sunset Rock will all be maintained. Depending on staffing levels, the Giant Forest museum could be kept open all year. The Moro Rock/Crescent Meadow road will continue to be used as a ski trail.

At General Sherman Tree the 18-site winter parking area will be maintained. The 12 spaces at the Round Meadow/Hazelwood area will also be plowed for winter use. At both areas two spaces will be reserved for visitors with disabilities, the remainder will be for general use.

Parking at lower Wolverton will be designed and constructed to allow snow plowing of up to 100 spaces if cross-country ski trail use warrants keeping this area open. Existing ski trails connect this area with General Sherman Tree and Lodgepole.

Snow play will be concentrated at the existing snow play area at Wolverton, where 300 spaces will continue to be plowed.

## Interpretation

**Orientation.** Visitor orientation to Giant Forest will be available through a number of media. Details are available in the 1996 *Interpretive Prospectus* for Sequoia and Kings Canyon National Parks. Within the grove orientation exhibits will be available in the major parking areas at Giant Forest Center, lower Wolverton, and Wolverton. These exhibits will provide visitors with information necessary to plan their visits effectively. Additional orientation exhibits will be erected at key Giant Forest trailheads and shuttle stops. These exhibits will tell visitors where they are within the grove and what they can see nearby. Staffed information services will be available at the Giant Forest museum, as well as at the park's Lodgepole and Foothills visitor centers. Other forms of orientation services that do not require physical facilities such as printed materials and electronic information systems will be provided as identified in the *Interpretive Prospectus*.

**Visitor Center.** The visitor contact station called for in the 1980 *Development Concept Plan* will be installed in the historic Giant Forest market building, which is listed on the National Register of Historic Places. This facility will be designated as the Giant Forest museum and will provide visitors the opportunity to learn the story of the giant sequoias and Giant Forest. The museum will be designed to serve as the starting point for visits to the grove and may be open all year, depending on staffing levels and visitor demand. Self-guiding interpretive trails will lead from the museum to the Round Meadow/Hazelwood area and other nearby features. To support the museum, the Beetle Rock Center building will be retained on an experimental basis to serve as a classroom and auditorium for educational purposes. After five years of use the building's effectiveness in this role will be evaluated, and a decision will be made as to whether the building will be retained and rehabilitated or razed.

**Focus Areas.** Interpretive focus will reinforce the general visitor pattern described above under "Access." The Giant Forest museum and the Round Meadow/Hazelwood area will receive primary emphasis; here visitors will have the opportunity to learn the basic facts about the giant sequoias and the surrounding ecosystem. The trails connecting the Giant Forest museum with the Round Meadow/Hazelwood area and other local features will include self-guiding exhibits. In addition, the General Sherman Tree area will continue to receive major interpretive focus befitting its status as a major park feature. Moro Rock and Crescent Meadow will also continue to receive emphasis in balance with their more limited access. Outdoor wayside exhibits will be present at these sites.

**Level of Interpretive Services.** A major goal of this interim plan is to increase the level of interpretive services and opportunities in Giant Forest. As explained above, this will be achieved by installing orientation exhibits, developing a museum, enhancing and enlarging the self-guiding trail system, and installing an augmented system of wayside exhibits.

## Picnicking

Picnicking continues to be a popular activity for park visitors. Picnic areas at Crescent Meadow and Wolverton are in poor condition, and their retention will conflict with other uses planned for these areas. For this reason an entirely new picnic area will be constructed at Pinewood. This site will incorporate up to 40 picnic sites (the actual number will be determined by the physical constraints of the site). Pinewood picnic area will include fully accessible sites and sites suitable for extended family groups of up to 20 persons. Picnic sites at Wolverton and Crescent Meadow will be phased out.

## Safety

Reducing parking in the grove will lessen the risk to visitors from forest hazards such as giant sequoia failures. Designating the road from Giant Forest Center to Moro Rock and Crescent Meadow as a bicycle route will provide a safe route for recreational bicycling in the grove.

## NATURAL RESOURCES

### Ecological Restoration

Guidelines called for in the 1995 *Draft Guidelines for Ecological Restoration* will be adopted and implemented. These guidelines call for restoration of previously disturbed sites in the grove based on a model that seeks natural process analogs for human disturbance sites. These guidelines are printed in full as appendix B in the 1995 *Draft Interim Management Plan / Environmental Assessment* for Giant Forest.

The total area to be restored is about 60 hectares (150 acres). Areas to be ecologically restored include the following (percentages are approximate):

- |    |                                     |      |
|----|-------------------------------------|------|
| 1. | Crescent Meadow parking area        | 100% |
| 2. | Giant Forest Village building sites | 50%  |

3.	Giant Forest Village parking area	75%
4.	upper Kaweah building sites	50%
5.	lower Kaweah building sites	80–100%
6.	Giant Forest Lodge building sites	100%
7.	Giant Forest Lodge parking areas	100%
8.	Round Meadow parking area	100%*
9.	abandoned campgrounds	100%
10.	Highlands housing area	100%
11.	Firwood housing area	100%
12.	upper Sherman Tree parking (summer)	100%*

\* If further study determines reasonable access for visitors with disabilities cannot be achieved from parking areas along the Generals Highway, these percentages of restoration may drop to 80–90% because some small parking areas will be retained.

At an undetermined future date, when the development concept plan is fully implemented and the Wolverton staging area constructed, additional restoration will be possible in lower Kaweah and a portion of upper Kaweah.

### Development Remaining in the Grove

Implementing this plan will leave only limited development in or immediately adjacent to the grove. These remaining developments will include:

1. Generals Highway (existing)
2. Moro Rock/Crescent Meadow road (existing)
3. Moro Rock parking area (existing)
4. Giant Forest museum (in existing market building)
5. Giant Forest ranger residence (existing)
6. upper and lower Kaweah parking areas (expanded)
7. Beetle Rock Center (existing)
8. Pinewood picnic area (use conversion)
9. lower Sherman Tree parking area on Generals Highway (redesigned)

To support these developments utility systems and fully accessible comfort stations will be maintained, renovated, or constructed at the Giant Forest museum, lower Kaweah, Moro Rock, Crescent Meadow, Pinewood, General Sherman Tree, and lower Wolverton. A comfort station may also be constructed near the Round Meadow/Hazelwood area.

### Tree Hazard Implications

Tree hazard work will continue at Giant Forest Center, the parking area for visitors with disabilities at the Round Meadow/Hazelwood area, parking areas at Moro Rock, and the small area reconstructed at Sherman Tree. Roadside tree hazard work along the Generals Highway and Moro Rock/Crescent Meadow road will be done to the same standard as along other park roadways. The Pinewood picnic and lower Wolverton parking areas, which are both outside the grove, will also require tree hazard management.



## **Wetlands**

Wetlands restoration will be undertaken where parking lots are removed from historic wetlands at Round Meadow and Giant Forest Lodge.

## **CULTURAL RESOURCES**

This *Interim Management Plan* will implement the cultural resources elements of the 1980 *Development Concept* plan. With the exception of the Giant Forest market, comfort station, and ranger residence, all identified historic buildings in the Giant Forest Village/Camp Kaweah and Giant Forest Lodge Historic Districts will be removed. Additional buildings in Giant Forest that were recently determined eligible for listing on the National Register of Historic Places will also be removed. The removals will be carried out under the provisions of a memorandum of agreement between the California State Historic Preservation Office and the National Park Service.

The Giant Forest market, comfort station, and ranger residence will be retained and rehabilitated under this plan. The market will become a museum; the comfort station and ranger residence will retain their historic functions. Future rehabilitation of these historic structures will be conducted in compliance with the 1989 *Historic Structures Report* prepared by the National Park Service, the provisions of the memorandum of agreement, and the *Cultural Resource Management Guideline* (NPS-28).

All other historic properties in Giant Forest that are listed or have been determined eligible for listing on the national register will not be affected by the implementation of this *Interim Management Plan*. These properties include the Generals Highway, the Moro Rock Stairway, Tharp's Log, Cattle Cabin, and Squatter's Cabin. No archeological sites in Giant forest are listed on the national register, and none of the identified archeological sites will be affected by this plan.

To protect unknown archeological resources, archeological testing will be done before any ground-disturbing activities are conducted. Testing will be subject to the provisions of the aforementioned memorandum of agreement.

## **PARK FACILITIES AND OPERATIONS**

### **Road Reconstruction**

The road in Giant Forest connecting upper and lower Kaweah with the Generals Highway will be reconstructed to serve parking areas at these sites. Required work will include widening the existing entrance road into upper Kaweah from 19 to 22 feet for a distance of 200 feet.

The existing road leading from upper Kaweah to lower Kaweah averages about 19 feet in width and will be selectively widened to enhance visitor safety; the existing grade will be retained. Sharp curves at each end of the road will be further widened to improve site distance. To provide necessary curve widening, grades on these curves may be adjusted.

The junction of the Moro Rock/Crescent Meadow road with the Generals Highway will be redesigned to be safer and more functional.

Shuttle stops and tour bus dropoff points will be constructed at Crescent Meadow, Moro Rock, the Round Meadow/Hazelwood area, the Giant Forest museum, Sherman Tree, and upper Wolverton. Additional shuttle stops may be added depending on visitor volume.

On the grove boundary road reconstruction will occur at Pinewood and lower Wolverton. At Pinewood the existing "Y" junction with the Generals Highway will be replaced with a "T" intersection.

To provide access to the new lower Wolverton parking area, the existing 0.5-mile road to the site will be widened to facilitate safe two-way traffic.

### Parking Areas

The upper and lower Kaweah parking areas will be reconstructed and enlarged within existing developed areas to accommodate up to 240 vehicles, including nine spaces for visitors with disabilities. In upper Kaweah the parking will be reconstructed and extended in the footprint of existing parking and buildings; only the building sites currently occupied by the one-story motel units and the old Camp Kaweah office building will be considered for parking development. Although this area has been previously disturbed, it is in proximity to sequoia trees and will require careful design and construction.

Of the approximate 240 spaces, about half will be constructed at upper Kaweah. All but 55 of the upper Kaweah sites will be considered temporary. The remaining 55 spaces will be used for off-season parking, as called for in the 1980 *Development Concept Plan*. The rest of the temporary spaces will be removed when the staging area at Wolverton Corrals is constructed at some future date. Parking at upper Kaweah will be placed as lightly as possible on the land, and grading and ground disturbance will be kept to a minimum, even if typical design standards must be modified.

The lower Kaweah parking area (up to 120 sites) will primarily occupy the footprint of the existing parking area, with some minimal regrading and extension into an area occupied by cabins. Because of its grade and alignment, the access road to this lot will only be used during the summer. Nine parking spaces for visitors with disabilities will be reconstructed out of the market parking area for access to the Giant Forest museum. Parking, walks, a shuttle stop, and realignment of the Moro Rock intersection at Giant Forest Center will occupy less area than the existing market parking. The excess market parking will be restored.

Twelve parking spaces for visitors with disabilities will be provided to serve the Round Meadow/Hazelwood area. If accessible grades and a safe road crossing can be achieved, the existing Hazelwood parking area will be reconstructed for these sites, and all the existing Round Meadow parking and roads will be removed. If further design and analysis finds this location unacceptable, the spaces will be reconstructed in the existing Round Meadow parking area, with the unneeded existing parking restored.

Similarly, 18 parking spaces for visitors with disabilities will be provided to serve Sherman Tree. If accessible grades and a safe road crossing can be achieved, the existing oversize vehicle parking

along the road will be reconstructed for this use, then all existing roads and parking will be removed from this area. If further design and analysis finds this location unacceptable, the spaces will be reconstructed within the exiting Sherman Tree road and parking area, with the unneeded existing parking restored.

A parking lot for up to 300 vehicles will be constructed at lower Wolverton largely within the footprint of the wood dump, borrow site, and storage area.

Parking for up to 40 vehicles will be provided in the Pinewood picnic area. This development will be within the developed zone of cabins at Pinewood.

To support the shuttle system, a site will be required for vehicle storage and light maintenance. This site has not been designated but will not be Giant Forest.

In areas where existing parking will be removed, pavement will be recycled into new construction.

### **New and Reconstructed Trails**

Accessible trails will be constructed or reconstructed at the Round Meadow/Hazelwood area, the Sherman Tree, and Crescent Meadow and will incorporate extensive sections of existing trails. These trails will generally be paved, 5 feet wide, with grades not exceeding 5%. New or reconstructed trails will have rest areas and be in accordance with accessible outdoor guidelines. The existing trail connecting Giant Forest Center with Round Meadow and running south of the Generals Highway will be studied for possible conversion to fully accessible status; this conversion will be made if the upgraded trail can be kept on or near its existing alignment.

The major new trail connecting lower Wolverton to Sherman Tree will follow a former road. It will be paved, about 0.25 mile long, have grades up to 10%, and will have rest stops with interpretive exhibits. The secondary return trail following Sherman Creek will be an unpaved trail and will incorporate much of an old trail.

Trails connecting the upper and lower Kaweah parking areas to Giant Forest Center will be paved. Trails connecting these parking areas to the trail system west of the Generals Highway will not be paved. The new trail connecting lower Wolverton and Wolverton will not be paved. Redesignation of a portion of the Congress trail for pedestrian use only will not involve any construction.

The paved trails to Sunset Rock and Tharp's Log will be rehabilitated as hard-surfaced trails using existing grades and alignments. Existing roads and campground loops west of the Generals Highway may be incorporated into the trail system. New segments may be constructed to connect features; unused pavement will be removed and recycled into new construction.

The final design of the trail system throughout Giant Forest will be the subject of a special study.



## **Potable Water**

The system that brings potable water from the Wolverton water treatment plant to the Pinewood water tank in Giant Forest will be retained. From this central storage facility, potable water will be distributed to the Pinewood picnic area and the Giant Forest Center complex. Further east, this same system will continue to serve the General Sherman Tree area and will also provide water for the facilities at the new lower Wolverton parking area.

The separate water system that supplies Crescent Meadow and Moro Rock will be maintained as long as the system continues to meet California potable water system standards. However, the system currently suffers from both quantity and quality problems, and its continued ability to meet standards cannot be assumed. If this system fails to meet state standards and can no longer be operated, a study will be conducted to determine how best to meet those needs.

Existing waterlines no longer serving commercial facilities will be abandoned, capped, and left in place.

## **Wastewater Treatment**

Because the state of California requires that the existing Giant Forest wastewater treatment facility close permanently no later than October 31, 1998, new wastewater treatment facilities will be required to serve the Giant Forest Center area. To meet this need a septic tank will be constructed near the market and a leachfield in the lower Kaweah area. The leachfield will also serve a comfort station in lower Kaweah.

Similar systems will be constructed to serve the lower Wolverton parking area and Pinewood picnic area. Existing septic tank/leachfield systems at Crescent Meadow, Moro Rock, and General Sherman Tree will be retained and rehabilitated if necessary. If potable water is no longer available at Moro Rock and Crescent Meadow at some future time, the associated comfort stations may be replaced by vault system facilities or closed altogether. A final decision will be based on a detailed analysis of visitor needs, environmental impacts, and cost.

If a comfort station is determined to be necessary in the Round Meadow/Hazelwood area it will use either a septic tank/leachfield approach or, if that proves unsuited for this fragile area, a contained vault system.

Most abandoned sewer lines will be capped and left in place; however, part or all of the Deer Creek sewer line will be removed where erosion is occurring, and the corridor will be restored.

## **Staffing Requirements**

Implementing this plan will require additional staffing over time. These personnel may be assigned to the NPS, a concessioner, some other cooperator, or some combination of these organizations.

Increases in interpretive services, especially those services associated with the Giant Forest museum, will require additional personnel. Additional maintenance work will be required to

service additional comfort stations and to maintain the new system of accessible trails. Larger, more concentrated parking areas and increasing use will require additional law enforcement. Developing a shuttle system will require operating, maintenance, and management staff.

It should be noted that closure of existing Giant Forest facilities does not free up staff per se for any of these functions if Wuksachi Village is constructed as planned.

TABLE 1: SUMMARY COMPARISON OF IMPACTS

The impacts of the *Interim Management Plan* are compared to the "no-action" alternative of the 1995 *Environmental Assessment*.

IMPACT TOPIC	NO ACTION	INTERIM MANAGEMENT PLAN
<b>VISITOR EXPERIENCE (ACCESS)</b>		
Focus	Continued access to all current visitor destinations; congestion at Sherman Tree and Crescent Meadow.	Overall improvement in visitor experience; balance use at General Sherman Tree and Giant Forest Center.
Roads	Continued secondary road access to Moro Rock/Crescent Meadow, Puzzle Corner; continued congestion on Crescent Meadow/Moro Rock road.	Summer visitors to Crescent Meadow, Moro Rock, Auto Log, and Tunnel Log will no longer experience congestion, but may be inconvenienced by changing from auto access to remote parking and a shuttle, or bicycle or hike. Overall improvement in hike/bike opportunities, but may inconvenience some visitors.
Parking	Visitors can continue to disperse on the scattered parking areas throughout the grove on a first-come first-served basis; continued congestion at Sherman Tree and Crescent Meadow.	The physical limitations on the size of the proposed parking areas and the increased time visitors spend on shuttles may limit visitor access during peak periods of visitor demand. Parking will alleviate congestion at the Sherman Tree. Parking at Giant Forest Center will be congested at peak periods. Crescent Meadow /Moro Rock users will experience a net effect of reduced visitation.
Shuttles	Continued opportunity to get to Giant Forest without a private vehicle from Lodgepole and Wuksachi; limited schedule.	A day use shuttle will allow visitors to leave their vehicles and increase opportunities for a pedestrian experiences in the grove. Some visitors may be inconvenienced by having to leave their car and pay a fee.
Trails	Network throughout grove provides access.	Improvements will benefit visitor experience and access throughout the grove.
Backcountry Access	Continued access at Wolverton and Crescent Meadow; congestion at Crescent Meadow.	Reduced congestion at Crescent Meadow; some inconvenience because of reliance on shuttle.

IMPACT TOPIC	NO ACTION	INTERIM MANAGEMENT PLAN
Access for Visitors with Disabilities	Continued access to Trail for All People around Round Meadow.	Overall benefit by access to all major Giant Forest focus areas. Some adverse impact to individuals during shoulder season at Crescent Meadow.
Winter Access	Continued opportunity at Wolverton, Sherman Tree, and market.	No major change in winter access; opportunity to slightly expand if demand increases.
<b>VISITOR EXPERIENCE (INTERPRETATION)</b>		
Orientation	No orientation in the grove; information at entrance and visitor centers.	Exhibits at parking areas will improve orientation to the grove.
Visitor Center	Continued educational programs, mostly organized groups, at Beetle Rock. Continued visitor activities and guided walks initiated from visitor centers outside of grove.	Enhanced interpretation of Giant Forest ecosystem from exhibits, information, and programs at the Giant Forest museum.
Focus Areas	Limited orientation and interpretation in the grove does not focus visitors; interpretation is piecemeal.	Visitors provided a more complete story of the grove through variety of interpretive media and direct experiences.
Level of Interpretive Services	Continued lack of NPS interpretation in the grove.	Orientation at parking areas, interpretation at the museum and wayside exhibits, and an enhanced system of self-guiding trails offer a high level of interpretive services for visitors.
<b>VISITOR EXPERIENCE (PICNICKING)</b>	Continued picnicking at Wolverton and Crescent Meadow; congestion at Crescent Meadow; competition with day users and backpackers for parking spaces.	Improvement in quality with adequate parking and accommodation of extended families and visitors with disabilities.
<b>VISITOR EXPERIENCE (SAFETY)</b>	Continued risk of hazard trees near existing parking in grove; no improvements for bicycle safety.	Reduction of scattered parking areas in grove reduces sequoia tree hazards, but possible hazards remain for parking at the Kaweahs, Round Meadow, and museum. Safe bicycle opportunity on Crescent Meadow road.

IMPACT TOPIC	NO ACTION	INTERIM MANAGEMENT PLAN
<b>NATURAL RESOURCES</b>		
Ecological Restoration	Erosion control as needed when buildings removed; continued alteration of soils under existing pavement. No active restoration program. Paved areas would not recover; regeneration elsewhere very slow, possible invasion of nonnative persistent species.	Implementation of <i>Guidelines for Ecological Restoration</i> will accomplish recovery goals and in result in long-term benefits.
Development Remaining in the Grove	Remaining development zone about 165 acres throughout grove. Remaining pavement would continue to affect sequoia roots and concentrate contaminated runoff into streams.	Significant reduction in remaining development zone to about 25 acres at Giant Forest Center. Impacts on sequoia roots, soils, and water quality from development will occur in a much smaller area.
Tree Hazard Implications	Tree hazard removal would continue on a reduced scale in the grove, resulting in continued alteration of the forest structure around remaining parking lots.	Tree hazard removal and impacts reduced further in the grove, limited to Giant Forest Center; continued at Pinewood outside of grove; initiated at lower Wolverton; overall significant reduction.
Wetlands	No new construction in wetlands. No wetland restoration.	Overall benefit 0.25 to 1 acre of wetlands will be restored in the Round Meadow and Lodge areas. No new construction in wetlands.
Threatened and Endangered Species	Long-eared myotis bat ( <i>Myotis evotis</i> ) candidate for category 2, maternity roosts in some buildings to be removed. Removal would be scheduled outside of breeding period.  No adverse effect on threatened or endangered plants or animals.	Same as no-action alternative.

IMPACT TOPIC	NO ACTION	INTERIM MANAGEMENT PLAN
<b>CULTURAL RESOURCES</b>		
Historic Structures	Historic properties would be removed, an adverse impact. Mitigation according to provisions in a memorandum of agreement with the California State Historic Preservation Office. Preservation includes market, comfort station, and ranger residence at Giant Forest Village, and Squatter's Cabin, Cattle Cabin, Tharp's Log, and the Moro Rock Steps.	Same as no-action alternative.
Generals Highway	There would be no effect on the Generals Highway.	Same as no-action alternative.
Rehabilitation and Adaptive Use of Historic Buildings	"Mothballing" the Giant Forest market building for possible future use would make its long-term preservation more difficult. Use and maintenance of the comfort station and ranger residence would continue preservation.	Rehabilitating the ranger residence and comfort station and adaptively using the market building as a visitor center/museum will have no adverse effects on integrity, will improve the physical condition, and will ensure long-term preservation of these historic buildings.
<b>PARK FACILITIES AND OPERATIONS</b>		
Road Reconstruction	There would be no major road reconstruction; maintenance of existing roads would continue.	Widening the road connecting upper and lower Kaweah will require the removal of a few selected trees (not sequoias). Reconstructing 0.5 mile of lower Wolverton access road along existing disturbed corridor will require some vegetation removal outside the grove (not sequoias). Constructing shuttle stops at Crescent Meadow/Moro Rock will not affect natural resources.

IMPACT TOPIC	NO ACTION	INTERIM MANAGEMENT PLAN
Parking Areas	Maintaining existing parking areas would result in impacts on soil conditions near sequoias; concentrated contaminated runoff would continue to affect streams.	<p>Parking at upper Kaweah (permanent and temporary) will largely follow existing parking areas and building footprints; selected trees will be removed (no sequoias). Some regrading will be required, however, design and construction methods will minimize activity in critical root zones of nearby sequoias.</p> <p>Temporary parking at lower Kaweah will occupy existing parking area and some cabin footprints and will require select tree removal (no sequoias). Minimal changes to grade will not affect nearby sequoias.</p> <p>Lower Wolverton parking will disturb about 7 acres of mixed conifer forest, most of which has been previously disturbed. About 1 acre of disturbance will be necessary for shuttle maintenance (site not yet identified).</p> <p>Developing Pinewood picnic and parking in a previously disturbed area outside of sequoia grove will have minimal impacts; select trees will be removed (no sequoias).</p>
Trail Reconstruction	Maintain existing trails.	Rerouting and improvements result in minimal disturbance and will not involve removal of mature trees.
Potable Water	Existing water system would be maintained.	<p>Maintaining the existing water systems for Giant Forest Center, Pinewood, and Sherman Tree and developing a new waterline to lower Wolverton will have no additional impacts. Unused lines will be capped and left in place.</p> <p>Waterlines at Crescent Meadow/ Moro Rock may be replaced in future; additional environmental analysis will be conducted as needed.</p>

IMPACT TOPIC	NO ACTION	INTERIM MANAGEMENT PLAN
Wastewater Treatment	Closing sewage treatment facility and developing a 7,800-square-foot leachfield in lower Kaweah would require soil disturbance and vegetation removal (no sequoias). Force main from Giant Forest Center would follow existing roads, trails, or utility corridors.	<p>Same as no-action, plus:</p> <p>Constructing an 1,140-square-foot leachfield at Pinewood and a 7,200-square-foot leachfield at lower Wolverton will require soil disturbance and tree removal (no sequoias); however, these actions will have no adverse impacts.</p> <p>A leachfield for the comfort station at Round Meadow will be built only if it was determined not to affect wetlands or sequoias; otherwise vault.</p> <p>Crescent Meadow and Sherman Tree leachfields will be studied for adequacy; if upgraded, additional compliance will be undertaken.</p>
Staffing Requirements	No change in current levels or types of staffing.	<p>Interpretive staff will be increased for museum; may be NPS or Natural History Association. Maintenance staff will be increased for additional comfort stations, trails. Shuttle drivers will be concession employees.</p> <p>Housing for additional employees will be addressed in the future.</p>



## IMPACTS OF THE PLAN

To facilitate comparison with the alternatives explored in the 1995 *Draft Environmental Assessment*, the same outline of presentation is followed in this document.

The impacts are compared to the no-action alternative presented in the 1995 draft plan. In summary, all buildings in Giant Forest, with the exception of the market, the ranger residence, the comfort station, and Beetle Rock education center would be removed. Other than that, nothing else would change from existing conditions except for a very few required health and safety actions, such as a wastewater disposal field to serve the residence and comfort station when the treatment plant is closed in 1998. Existing roads, parking, and trails would be retained. Erosion control work would be done as necessary, but active ecological restoration would not be carried out in the grove. The existing Lodgepole shuttle would be retained to provide visitors a connection between Wuksachi, Lodgepole, and Giant Forest.

### VISITOR EXPERIENCE

#### Access

**Focus.** Emphasizing both General Sherman Tree and Giant Forest Center will balance visitor use and reduce concentration at General Sherman Tree. As a result, visitors will benefit from a richer and more complete giant sequoia interpretive experience than is now available in Giant Forest. Visitors will also benefit from hiking opportunities on self-guiding trails at these focus areas.

Moro Rock and Crescent Meadow will be reduced in emphasis in this plan. The implementation of mandatory peak season shuttle service to these areas will have the effect of capping use in these areas (see "Roads" section for further discussion).

The addition of a designated focal point for picnicking will have a beneficial effect on the visitor experience. By focusing picnickers on an area where they do not compete with other users for parking, additional parking will remain available at other sites for hikers and sightseers.

**Roads.** Using the Moro Rock/Crescent Meadow road as a shuttle system route during the summer will improve the visitor experience by removing all private vehicles and associated congestion from the route. The shuttle system will benefit visitors who wish to explore the grove's trails without having to worry about getting back to a single parking area. Some visitors will be inconvenienced by having to switch to public transportation systems to see these areas, and during periods of peak demand, some visitors may find the shuttle systems and parking areas full.

Designating the Moro Rock/Crescent Meadow road as a bicycle route during the summer when it is closed to private vehicles will provide a high quality bicycle touring route within the giant sequoia area. This change will provide alternative access to this area for those who prefer not to use the shuttle system. The designation also will provide another way for visitors to enjoy the Giant Forest without using their motor vehicles.

**Parking.** Reconfiguring parking in the grove and implementing a day use shuttle will affect visitor access. The physical limitations on the size of the proposed parking areas and the increased length of time visitors spend on shuttles may limit visitor access during peak periods of demand. The 1995 *Draft Visitor Transportation System Alternatives Analysis* addressed the feasibility of providing a shuttle system, and studied the patterns of use and demand. The projected pattern of use and demand was adjusted for the parking called for in this final plan.

Day use visitation to Giant Forest was predicted by approximating the volume on the Generals Highway, estimating the Giant Forest demand, and applying assumptions about the visitation capacity. Based on actual traffic counts of northbound and southbound vehicles, a number was established to represent peak weekend demand (2,518 vehicles). Using data from the 19 summer holiday and weekend days, the sixth highest daily volume was selected as the primary design day, representing a typically busy summer weekend day.

Based on the identified focus areas, assumptions were made about the percentage of visitors who would visit each area, and how long they would stay (totals exceed 100% because many visitors would visit more than one focus area):

Focus Area	Visitor Attraction Rate	Length of Stay
Sherman Tree	60%	1 hr.
Giant Forest Center	60%	2 hrs.
Moro Rock/Crescent Meadow	30%	4 hrs.

Using these assumptions, the analysis of vehicle arrivals and departures indicates that the lower Wolverton parking area will have ample parking for the Sherman Tree and provide considerable additional parking for shuttle users. This will be an overall improvement for visitor access because visitors currently experience gridlock at the Sherman Tree during peak hours of summer days. Visitors will have to choose the 0.25-mile trail or the shuttle, which will take a little more time than the present situation.

At Giant Forest Center, the projected pattern of use indicates that on the peak weekend design day, the upper and lower Kaweah parking areas will be full by around 10:00 A.M., and while vehicles are projected to turn over about every two hours, these lots will remain full until around 4:00 P.M. About 20% of arriving visitors wanting to visit Giant Forest Center will not be able to park here. During those times, visitors will be inconvenienced by having to search for parking in a congested lot. The steep road connecting the upper and lower parking areas will aggravate the problems. Excess visitors will be turned away and will have to park at Wolverton or lower Wolverton and shuttle back to Giant Forest Center. Some visitors may change the time of their visit to miss the congestion, others may choose to skip the experience. A clear system of signs to let visitors know when the lots are full and directing them to the Wolverton lots will help alleviate some of these problems. In the long-range future most visitors will park at a proposed parking garage and shuttle back.

The 180 parking spaces along the Moro Rock/Crescent Meadow road will generally be replaced by parking at Wolverton and lower Wolverton. However, because of the longer period of time required to shuttle back to these areas, the net effect will be a reduction in the amount of current use. The current capacity is about 1,600 people per day, which will be reduced to about 1,350

people per day (a reduction of about 15%). The result may be to turn away some users, or to convert them to hikers or bicyclists.

Implementing the shuttle and relocating picnicking to Pinewood will affect visitor use patterns at Wolverton. When a shuttle system is initiated current day-hikers and backpackers may compete for parking spaces with shuttle users. Relocating picnicking from Wolverton will free some space. Generally, the day hikers and backpackers will arrive early, leaving the remainder for mid-day shuttle users.

Parking at the Pinewood picnic area should be adequate to support demand for that activity and will not generally serve day hikers access in Giant Forest.

Shoulder season (fall) parking for Giant Forest Center, Sherman Tree, and Moro Rock will accommodate most demand, but visitation patterns will change. When the seasonal shuttle service stops, the road to Moro Rock will be open to private vehicles; Crescent Meadow will only be accessible by bicycle or hiking because this segment of road will remain closed. Visitors to Sherman Tree will have to walk the 0.25-mile trail when the shuttle operation ends.

**Shuttles.** The shuttle system will enhance visitor access and most visitor experiences by increasing opportunities for seeing the grove. Overnight visitors staying at Lodgepole Campground or Wuksachi Village will be able to travel to all major features within the Giant Forest without using their own vehicles or competing for parking spaces. However, day use visitors wishing to use the shuttle system during times of peak use will have to compete for parking (see "Parking" section above). Some visitors may be inconvenienced by having to use a shuttle to visit Moro Rock or Crescent Meadow. Also, some visitors will be inconvenienced by having to pay for shuttle services either through an increase in general fees (about \$1.25 per visitor) or through user fees (about \$2.00–3.25 per passenger).

**Trails.** Retaining all major trails in Giant Forest will ensure that the benefits of this recreational trail network will continue to be available to visitors.

Developing an improved self-guiding trail system connecting Giant Forest Center with the Round Meadow/Hazelwood area and neighboring features will provide visitors with a greatly improved opportunity to use and enjoy this scenic area.

Visitors with disabilities will benefit from the interpretive trail systems at Round Meadow/Hazelwood, General Sherman Tree, and Crescent Meadow, which will be fully accessible.

Constructing a new trail to the Sherman Tree from lower Wolverton parking area will provide a much better opportunity to see and appreciate the General Sherman Tree and its setting than is now available through the short trail leading from the existing summer parking area. Removing the existing summer parking lot and access road from the area will provide an enhanced setting for the tree. These improvements will mitigate the increased distance most visitors will need to walk to see the tree; the new trail will take the average visitor about 10 minutes downhill to the tree and 20 minutes to return uphill to the parking area.

Trail connections from major parking areas at upper and lower Kaweah and lower Wolverton will continue to provide visitor access to the Giant Forest trail network.

**Backcountry Access.** Providing shuttle access to the Crescent Meadow trailhead during the summer months will reduce congestion. Backpackers will have the option of shifting their backcountry entry point to Wolverton; however, this will add 1,400 feet of elevation climb. By allowing hikers to move easily from one trailhead to another, the shuttle system will facilitate loop trips. These changes will modify use patterns and may inconvenience visitors by increasing their reliance on a shuttle.

Shoulder season users wishing to access the High Sierra trail from the lower Wolverton parking area may be inconvenienced when the shuttle is not running because about 1 mile will be added to High Sierra trail destinations.

Closing the Crescent Meadow trailhead to equestrian parties will not have an adverse effect because almost all such parties now use the Wolverton trailhead.

**Access for Visitors with Disabilities.** Visitors with disabilities will benefit from access to the major Giant Forest focus areas. Access to Moro Rock and Crescent Meadow (with a fully accessible interpretive trail) will be by remote parking and shuttle in the summer months. In the shoulder months, the Moro Rock area will be open to private vehicles; however, Crescent Meadow will be unavailable in shoulder or winter seasons to visitors with disabilities, which may adversely affect some individuals. Visitors with disabilities will benefit from a fully accessible access to the Pinewood picnic area.

**Winter Access.** Winter access will change very little and snow plowing will allow for meeting potential increases in demand. Snow play parking at upper Wolverton will continue to meet demand at that site, benefiting winter visitors. The new lower Wolverton parking area will be used for additional winter access if demand exists. This will benefit visitors by providing a new winter access point near the grove boundary.

Winter access will be improved for visitors with disabilities by reserving spaces at General Sherman Tree and the Round Meadow/Hazelwood area.

## **Interpretation**

**Orientation.** Installing orientation exhibits at parking areas and developing the Giant Forest museum will increase the quantity and quality of visitor orientation. Visitors will benefit from having more information available to them as they begin their visits to the area.

**Visitor Center.** Developing the Giant Forest museum will enhance interpretation of the giant sequoia forest and Sequoia National Park in general. Visitors will benefit from opportunities to learn the complete story of the giant sequoias and their ecosystem — previously a gap in the park's interpretive program. Visitors will also benefit from Giant Forest hiking opportunities that originate at the museum.

Other facilities currently interpreting aspects of the giant sequoias will focus more on other park themes, which will improve the overall balance of the visitor experience.



**Focus Areas.** Visitor will continue to benefit from established interpretive focus areas; in addition, an enhanced self-guiding trail system in the Giant Forest Center and Round Meadow/Hazelwood areas will enrich the park's interpretive program.

**Level of Interpretive Services.** Increasing the level of interpretive services in Giant Forest by improving orientation, establishing the Giant Forest museum, and an enhancing the system of self-guiding trails will result in visitor experiences that involve better informed, more enjoyable, and less damaging interactions with park resources.

## Picnicking

Replacing the Wolverton and Crescent Meadow picnic areas with a new Pinewood picnic area will improve the quality of the picnicking experience by providing a well-designed, sustainable facility that incorporates accessible sites and accommodates large extended families. Improved parking at Pinewood will eliminate the mid-day parking frustrations often experienced at Crescent Meadow.

## Safety

Reducing parking sites in the grove will lessen the risk to visitors from giant sequoia failures; however, potential hazards will remain at upper and lower Kaweah, the Round Meadow/Hazelwood area, and the Giant Forest museum.

Designating the Moro Rock/Crescent Meadow Road as a summer bicycle route once it is closed to private vehicles will provide Giant Forest visitors a safe bicycle trail for the first time; periodic shuttle buses on the route will not disrupt this use.

## NATURAL RESOURCES

### Ecological Restoration

Accomplishing the restoration goals of the 1980 *Development Concept Plan* will have a positive effect on natural resources in Giant Forest. The geographical extent of restoration will include abandoned campgrounds, roads, and lodging and commercial facilities. All identified areas will receive full treatment except upper and lower Kaweah and Pinewood, which will be partially restored.

Adopting and implementing the *Guidelines for Ecological Restoration* will largely mitigate past environmental impacts on Giant Forest. The guidelines will ensure that previously developed areas are fully integrated into the Giant Forest ecosystem. Executing the procedures contained in the guidelines will establish a full representation of native species in areas where natural seed banks have been exhausted and "jump start" the revegetation process by 10–15 years. The result over time will be that most areas of the grove damaged by previous development will merge back into the natural forest as quickly and fully as possible.

## Development Remaining within the Grove

Only one major development zone — Giant Forest Center — will remain in the grove. In this area of 10 hectares (25 acres), parking areas and several buildings will remain in close proximity to giant sequoia trees. The remaining development zone at Giant Forest Center covers 15% of the previous area of development, which equates to about 0.01% of the Giant Forest grove. Maintaining underground utility systems will perpetuate potential adverse effects on giant sequoias and other conifers in the area. Fire regimes and related systems of vegetative reproduction will continue to be disturbed. Parking areas will continue to alter soil moisture patterns. These impacts will occur on a smaller scale than at present and are not considered significant.

The Pinewood picnic area and the lower Wolverton parking area will be placed very near to but not within the boundaries of the grove; however, neither development will directly affect the grove.

## Tree Hazard Implications

Because tree hazard work is a direct result of development, the amount of tree hazard work necessary in Giant Forest will be greatly reduced from that carried out in the recent past. Removing parking areas at the Round Meadow/Hazelwood area, Crescent Meadow, and Sherman Tree will end tree hazard work and resultant damage to the forest in these fragile and scenic areas.

Retaining development at Giant Forest Center will require that tree hazard work continue in these areas, although on a more reduced geographical extent than in the past owing to the removal of buildings from outlying areas.

Tree hazard work will continue at Pinewood and will be initiated on a more systematic basis at the lower Wolverton site.

## Wetlands

Removing parking lots in the Round Meadow/Hazelwood and Giant Forest Lodge areas that impair wetlands will have a beneficial effect on wetlands in Giant Forest. Ecologically restoring portions of these parking areas where wetlands have been filled will return these areas to wetland status. Removing a major part of the roads and parking in the Round Meadow drainage will reduce polluted inflow and siltation. No new access routes will affect wetlands in Giant Forest.

## Threatened and Endangered Species

There will be no adverse effects on threatened or endangered plants or animals. The long-eared myotis bat (*Myotis evotis*) is a candidate for category 2 listing, and has been found to have maternity roosts in some buildings to be removed; however, the buildings will be removed

outside of the breeding period. Surveys for threatened or endangered plants will be completed for the lower Wolverton road and access routes.

## **CULTURAL RESOURCES**

Removing historic properties will adversely affect cultural resources in Giant Forest. Mitigating measures will be completed according to stipulations in a memorandum of agreement with the California State Historic Preservation Office. Preserving the market, comfort station, and ranger residence at Giant Forest Village and the Squatter's Cabin, Cattle Cabin, Tharp's Log, and Moro Rock Steps will have a beneficial effect on the visitor experience. Adaptively using the market building and rehabilitating the ranger residence and comfort station will not adversely affect the character of these structures; improving their physical condition will ensure successful long-term preservation. The Generals Highway will not be affected.

No impacts are anticipated on archeological resources. Some additional surveys will be conducted as needed in development zones. If unknown resources are uncovered during construction, work will be stopped in the discovery area, and the Park Service will follow provisions of 36 CFR section 800.11 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990.

## **PARK FACILITIES AND OPERATIONS**

### **Road Reconstruction**

Conducting road reconstruction projects in the Giant Forest Center within areas of past disturbance and use will minimize adverse effects on the natural environment.

Improving access into upper Kaweah will involve widening the 19-foot road to 22 feet; the widening will be done on the west shoulder of the right-of-way to avoid disturbing the cluster of sequoias to the east. This widening will require removing road shoulder trees; however, no sequoias will be removed and no significant changes in grades will be allowed.

Widening the road leading from upper Kaweah to lower Kaweah will be done by stabilizing banks and using small retaining walls. The upper curve will be widened by digging into the cut slope. The road grade may also be lowered, which will require removing a small number of trees; no sequoias will be disturbed. The lower curve has grades of up to 15%, and the general alignment will be retained; however, widening and minor realignments may be used to improve traffic safety.

Reconstructing the junction of the Generals Highway and the Moro Rock road will provide a better entrance to this important side route. All work will occur within the footprints of existing road, parking, and building sites, which will minimize effects on the natural environment. The removal of some past landscaping will not result in grade changes or effects on natural vegetation.

Constructing shuttle stops and tour bus drop-off points at Crescent Meadow, Moro Rock, the Giant Forest museum, Sherman Tree, lower Wolverton, and Wolverton will have only minimal

impacts on natural resources because all development will all take place in existing road and parking footprints.

Replacing the Y intersection at Pinewood with a T intersection will require approximately 150 feet of new roadway. The new entrance road will be built to a 22-foot standard. The new intersection alignment will require cutting through a low rise to a depth of approximately ten feet and the removal of pines and firs. The impacts of this disturbance will be mitigated by the restoration and revegetation of the two legs of the existing Y. The acreage of restoration achieved will exceed substantially the area disturbed by the new alignment.

Reconstructing the road to lower Wolverton will entail widening the 0.5-mile-long route to a consistent 22-foot width. In most areas the existing route will be utilized, but sharp curves might be reduced. Because of a steep downgrade where the existing road enters the woodyard area, the reconstructed road will diverge from the current alignment 200–300 yards east of the parking area and seek a new alignment. This last action will require vegetation removal and grading. A number of mature trees will be removed; however, no sequoias will be effected.

An alternative route from the Wolverton corrals was studied, but an analysis of environmental, functional, and cost factors favored the use of the existing road corridor. Surveys for threatened and endangered plant species will be completed along the road corridor.

## Parking Areas

Parking development in upper Kaweah will take place in the area that is currently occupied by the one-story motel units and the old Camp Kaweah office building, as well as in areas that are being used for parking now. Development will require the removal of remaining trees and soil disturbance in the form of grade changes. Grading disturbance will be reduced by relaxing design standards to allow steeper than usual cross slopes and grades in portions of the parking area that are not be retained permanently. Several medium-sized sequoia trees border the site and no new parking development will occur within their drip lines. Portions of this parking will be removed at some future date when the 1980 *Development Concept Plan* is fully implemented.

Parking development in lower Kaweah will take place in the existing parking footprint and an adjoining area currently occupied by the rustic housekeeping cabins. Extending the parking into the rustic housekeeping cabin area will require removing trees and will result in some soil disturbance but will require no substantive changes in grade. This area has been extensively disturbed by more than 50 years of use as a rental cabin area, and the remaining forest is already severely impacted by human activity. This parking area will be removed at some future date when the 1980 *Development Concept Plan* is fully implemented.

Constructing the lower Wolverton parking area will displace the wood dump and maintenance storage function at that site. Park staff will study other sites outside Giant Forest for these functions. Other disturbed sites such as the Dorst borrow pit will receive primary consideration. Before a decision is finalized, a compliance review will be conducted to ensure that no significant impacts will result.

The lower Wolverton area has been extensively disturbed in the past — many trees have been removed, almost all understory vegetation has been destroyed, the soil has been extensively



disturbed, and two large borrow pits have been excavated. Constructing the new parking area will require grading and removal of additional trees. The old burn pit site will be tested for hazardous materials and such materials will be addressed if present. About 7 acres of this area will be used for parking, most of which has been previously disturbed.

The parking area for visitors with disabilities near the Giant Forest museum will be constructed in the footprint of existing development in that area and will require only minimal ground disturbance.

The parking area for visitors with disabilities serving the Round Meadow/Hazelwood area will occupy one or both of the Hazelwood and number three/four parking areas. The existing footprints will not be extended, and no new impacts will occur.

Providing up to 40 picnic sites at the Pinewood developed area will require constructing 40 new parking sites. Removing substandard access roads on the site and replacing them with a new road/parking alignment will require tree removal and grading. The forest at this site has been subject to more than 60 years of hazard tree removal and has been reduced already to a remnant state. Removing some remaining trees and additional disturbance will result in only minimal additional impact. No sequoias will be affected.

### **New and Reconstructed Trails**

Constructing or reconstructing several miles of self-guiding nature trail in the Giant Forest Center and Round Meadow areas will result in minimal disturbance. Whenever possible, existing trails or roadways will be incorporated into the new trail network. New trail segments will be routed to prevent disturbing wetlands or removing mature trees. Accessible trails at the Round Meadow/Hazelwood, Sherman Tree and Crescent Meadow areas will be built to standard with 5% maximum grades, a hardened surface, and a minimum width of 5 feet. Such trails will follow existing disturbance or topographic contours to minimize excavation and grading disturbance and to avoid disturbing wetlands.

Converting the abandoned road grade to a trail that connects lower Wolverton parking with the General Sherman Tree will allow for the control of ongoing soil erosion on the old road surface. Adverse impacts on the natural environment will be minimal.

Developing or rehabilitating connecting trails will require removing seedling trees and forest debris from the trail bed and restoring or installing erosion control barriers. These actions will have no adverse impact.

Rehabilitating the paved trails to Sunset Rock and Tharp's Log will not result in new disturbance. Wetlands crossings will be improve, which will reduce long-term impacts.

### **Potable Water**

Potable water lines currently run from the Pinewood tank to all locations at Pinewood, Round Meadow, and Giant Forest Center where potable water will be needed in the future. Water will

be supplied to these sites in the future either through existing lines or through replacement lines following existing utility corridors. No new impacts will result.

Potable water will be supplied to the lower Wolverton parking area through a new waterline that will connect the site to the existing Wolverton to Pinewood water main. This water main runs beneath the Wolverton road; a new connecting line will be constructed within the right-of-way of the new access road to lower Wolverton. There will be no additional impacts beyond those associated with the roadwork.

Maintaining the Crescent Meadow/Moro Rock water system will have no new impacts. If this system fails, a study will be made of the area's needs; this study will include a consideration of environmental impacts.

Existing waterlines that are to be taken out of service will be capped and left in place, which will eliminate the impacts associated with their removal.

### **Wastewater Treatment**

The new wastewater treatment system for Giant Forest Center will require a new sewerline from the Giant Forest Museum vicinity to the leachfield site in lower Kaweah. This line will run through the existing disturbance area in upper Kaweah and will follow existing utility alignments whenever possible. The lower Kaweah leachfield site will cover 7,800 square feet and will require both soil disturbance and vegetation removal.

Constructing new leach systems at the Pinewood picnic area and the lower Wolverton parking area will disturb 1,140 square feet at Pinewood and 7,200 square feet at lower Wolverton. This will result in only minor adverse impacts.

Existing leachfield systems at General Sherman Tree, Moro Rock, and Crescent Meadow will be studied to see if they are adequate and will be upgraded or reconstructed if necessary. These actions will require additional compliance.

Constructing a leachfield near Round Meadow will be undertaken only if a site is found that meets all environmental standards, including not disturbing giant sequoia roots. If these standards cannot be met a contained vault toilet will be constructed.

Abandoning most sewerlines will involve capping, not removal. The Deer Creek sewerline will be removed and the corridor restored, which will result in minor, short-term impacts.

### **Staffing Requirements**

The impact of the required additional personnel is not fully quantifiable at this time; however, additional personnel will be necessary. Existing NPS employee housing in the Lodgepole area will not be able to support additional persons, but it is possible that many, or even most, of these persons will work for cooperators like the Sequoia Natural History Association or contracted concessioners. Many of these employees might commute from outside the park. Any additional housing will need to be addressed.

## PUBLIC COMMENT SUMMARY

Park staff undertook an extensive effort to collect public comment on the 1995 *Alternatives for Interim Management and Draft Environmental Assessment* for Giant Forest, Sequoia National Park.

The public comment period ran for 10 weeks. During that time the following actions were undertaken to encourage public involvement:

- The front page of the *Sequoia Bark* park newspaper featured the issues involved and opportunity to comment; this was distributed to almost every visitor entering Sequoia and Kings Canyon National Parks.
- News features were generated in California newspapers and on local television stations.
- Fourteen public involvement workshops were held in the Giant Forest/Lodgepole area.
- Seven public workshops were held outside the park, including two in southern California, where the majority of park users reside.
- Six staff workshops were held to allow NPS and concessioner staff to comment on the plan.
- A display was erected at the Lodgepole visitor center explaining the three alternatives and the issues involved.

A public involvement worksheet was developed and handed out to all workshop participants. Mr. Mark Lellouch, a graduate student at Stanford University, was engaged to prepare an analysis of the public comment. The following paragraphs summarize his report.

A total of 260 worksheets were received during the 10-week public comment period, which ran from July 17 through September 22, 1995. Worksheets allowed respondents to provide both a numerical score for each question and written comments. Many respondents noted that they appreciated being given the opportunity to share their hopes and concerns.

Of the 260 worksheets, only 23 or 9% are presumed to have been completed by NPS or concessioner staff. (Worksheets handed out at employee workshops were coded). This is a very small sample on which to base any observations. In general, however, employee comments usually paralleled the general trend of public comment.

Most of the respondents attended one of the 14 public workshops conducted in the park. These programs occurred on Mondays at noon in front of the Lodgepole Visitor Center and on Thursday evenings at the Giant Forest Lodge amphitheater before the evening campfire program. Both venues attracted primarily well informed repeat visitors who were either camping or staying overnight in the lodge. The nature of workshop participants should be kept in mind when evaluating the responses. Day use visitors were probably under represented in the process.

## VISITOR EXPERIENCE AND ENVIRONMENTAL CONSEQUENCES

Note: For these questions numerical values relate to a scale ranging from strong support (5.0) to strong opposition (0.0).

**Encouraging/requiring walking to see the grove** — Respondents concurred with the goal of encouraging walking as the best means of seeing the sequoias (4.0). Support for encouraging walking was even higher among park employees (4.4). Requiring rather than encouraging walking rated somewhat lower (3.0). Responses to this question varied more than those in any other section. The standard deviation here was 1.9 versus a typical 1.5–1.7 for other questions.

**Reducing development in the grove** — Respondents agreed with the goal of reducing development in Giant Forest (3.0). There was almost no support for retaining primary parking and related impacts in the grove; the score was 1.1, the lowest on any question in this sequence.

**Shifting focus to Round Meadow** — The proposal to shift primary visitor focus to the Round Meadow area received a relatively low score (2.7). Written comments related to this issue emphasized a fear of congestion at the new site and a general satisfaction with the current visitor focus pattern.

**Developing fully accessible trails** — The proposal to develop an extensive system of trails accessible to visitors with disabilities received a moderately high score of 3.5.

**Providing a visitor center/museum in Giant Forest** — There was strong support (4.0) for this proposal. Many respondents commented in writing on the importance of better educational services in the park.

**Developing new picnicking facilities** — This proposal received a relatively low score of 3.0 despite the fact that picnicking is one of the park's most popular recreational activities. This score may represent the fact that most respondents were overnight users, who are less likely to use formal picnic areas than day users who often come to the park specifically for that purpose.

**New development at Sunset Rock, Pinewood, and lower Wolverton** — Public support for reusing these sites for parking was low (2.9), and many written comments expressed concern. In addition, a number of letters specifically objected to redeveloping the Sunset Rock area. The numerical question lumped the three sites together, but almost all written comments focused on Sunset Rock.

**Redeveloping Existing Road Corridors** — This proposal, which would improve existing road corridors in upper and lower Kaweah and to Sunset Rock to facilitate parking, received a very low score of 2.1. This response was inconsistent with higher support (2.9) for building parking in these areas.

Park staff differentiated the acceptability of roadwork in the Kaweah area (2.7) from Sunset Rock (1.9); the public did not see a significant difference.

Considerably stronger general support (3.3) was evidenced for roadwork to support visitor parking at lower Wolverton.



## ECOLOGICAL RESTORATION

Responses to a question about whether the National Park Service should pursue forest restoration through active revegetation or through natural recovery split almost evenly. A very slim majority of 51% supported active revegetation. Comments in favor of natural recovery almost always stated that nature knows best and should be left alone.

## ACCESS / TRANSPORTATION

Respondents demonstrated generally strong support for reducing private vehicle use in Giant Forest and instituting a shuttle system.

When given an option of (1) closing the Moro Rock/Crescent Meadow road to private vehicles and instituting a shuttle, (2) closing the road and having only bicycle and foot access, or (3) maintaining the status quo, respondents strongly selected option one.

Note: A different rating system was used for these questions, with the lowest number showing strongest preference.

Option (1)	1.2
Option (2)	2.1
Option (3)	2.5

Identical scores were registered when the same question was asked about the General Sherman Tree area.

When respondents were asked if they supported a shuttle system for day use visitors in Giant Forest, 92% answered yes. When asked if they would pay for the service, 86% answered yes, with an average acceptable amount per person for an all-day pass being \$4.80.

Respondents were given a choice of how shuttle fees should be paid and 70% favored adding the fee to the basic park entrance fee; only 30% advocated fees paid by service users only.

## ALTERNATIVES

Respondents were given the opportunity of rating the desirability of the three alternatives proposed in the draft plan. Again, low scores reflect the strongest preference.

**Dispersed use / consolidated parking (score 1.3)** — Focus visitor use at the Round Meadow area of the grove by providing concentrated parking and a new trail system; close existing summer parking at Sherman Tree, Moro Rock, and Crescent Meadow; and provide shuttle system access to these areas.

**Concentrated focus / pedestrian experience (score 2.0)** — Focus visitor use at the Round Meadow area of the grove by providing concentrated parking and a new trail system; close existing summer parking at Sherman Tree, Moro Rock, and Crescent Meadow and rely on walking for access to these areas.

**Maintain existing visitor access and parking: no action (score 2.6)** — Keep existing patterns of roads, parking, private vehicle use, and trails.

## OTHER PUBLIC COMMENT RECEIVED

In addition to the 260 public worksheets, about 50 letters were received addressing issues raised in the draft plan for the general management of the Giant Forest/Lodgepole area. These letters generally reflected the concerns raised in the worksheets except that there was very strong emphasis on not building a parking lot near Sunset Rock. Approximately 20 letters spoke specifically about opposition to the Sunset Rock proposal.

About 20 additional worksheets were received after the public comment period had closed and the database had been prepared. These worksheets were read and did not differ significantly from those analyzed.

## AGENCY CONSULTATION

Copies of the draft plan were shared with other public agencies, including the United States Fish and Wildlife Service and the California Department of Fish and Game. No comments were received.

## DISCUSSION

This section provides background information on primary elements of this plan and how they were developed.

### WHY IS IT NECESSARY TO INCREASE VISITOR FOCUS IN THE GIANT FOREST CENTER AND ROUND MEADOW AREAS?

For several decades the General Sherman Tree and Moro Rock/Crescent Meadow areas, which are the primary areas where visitors to Giant Forest go to see sequoias, have been congested during periods of peak summer use. Because of the lack of parking in these areas, many visitors have been unable to get out of their cars so that they can experience the giant sequoia forest firsthand. In addition, the very heavy existing concentration of visitor has tended to increase resource problems such as erosion and bear/picnicker interactions.

The Round Meadow area and its adjoining features including Hazelwood and Sunset Rock are rich in giant sequoias and also have wetlands of exceptional beauty and interest. For many years day use of these areas has been made difficult by the presence of commercial facilities, which both used available space and detracted from the quality of the natural experience.

The soon-to-occur closing of the old commercial facilities in the Giant Forest Center area will provide a one-time opportunity to redistribute visitor use within the grove and thus improve general access and visitor experiences.

### WHY IS IT NECESSARY TO MAINTAIN VISITOR PARKING IN THE GIANT FOREST CENTER AREA?

Parking is the key to visitor access to park features. The 1980 *Development Concept Plan* calls for the removal of all summer parking from the grove and the construction of a large staging area (1,700 vehicles) near Wolverton. The 1980 plan also calls for retaining 55 parking places in the Giant Forest Center area for shoulder season and winter museum parking.

The cost of constructing the proposed Wolverton staging area and of implementing a shuttle system capable of moving all visitors who wish to see the grove from Wolverton to Giant Forest is currently prohibitive. For this reason, until the 1980 plan is fully implemented, it will be necessary to retain parking on a significant scale somewhere in the western portion of Giant Forest. As a result of the comments received in response to the 1995 draft plan, the National Park Service has concluded that the best area to retain this parking is at upper and lower Kaweah.

This parking can be placed in areas of existing disturbance and is close to both the Giant Forest museum and the Round Meadow/ Hazelwood area.

## **WHY DID THE NATIONAL PARK SERVICE CHOOSE TO ABANDON ITS PROPOSAL FOR PLACING PARKING IN THE OLD SUNSET ROCK CAMPGROUND AREA?**

In the 1995 draft plan the Park Service proposed placing the primary public parking area for the western portion of Giant Forest in the old Sunset Rock campground area north of Round Meadow. This was proposed because the site was outside the grove and the construction of parking at that site would not involve disturbing giant sequoias. The idea was dropped because further study suggested that providing improved road access to the site would cause unacceptable damage to giant sequoias and because public comment strongly opposed the idea. Further, the spotted bat, a category 2 species, was found to be feeding in this location during the summer of 1995. In the plan parking is shifted from Sunset Rock to upper and lower Kaweah.

## **WHY IS IT NECESSARY TO MOVE THE PRIMARY PARKING AREA FOR GENERAL SHERMAN TREE?**

The existing summer parking area at General Sherman Tree contains less than 100 spaces. Parking demand far exceeds supply, and the lot is full during the busier times of most summer days. Gridlock is common, thus effectively closing the area to emergency and law enforcement vehicles. The result is that visitors often are unable to walk the trail to the base of the world's largest tree and NPS operations are frustrated.

Expanding the existing lot is not possible for environmental reasons. Giant sequoia trees, a stream corridor, and topography all prevent enlargement. The existing lot also visually detracts from the natural setting; the view from General Sherman Tree clearly encompasses the congested, noisy parking area. In addition, the main trail leading from the parking lot to the General Sherman Tree itself must cross the road.

The solution is to move the parking to a site about 0.25-mile distant, but outside the grove, where up to 300 vehicles can be parked. This should largely alleviate parking shortages and thereby enhance access to the tree, while at the same time improving the visual quality of the tree's setting and ending the impacts associated with the current parking area.

## **WHY IS IT NECESSARY TO CLOSE THE MORO ROCK/CRESCENT MEADOW ROAD DURING THE SUMMER AND INSTITUTE SHUTTLE ACCESS TO THAT AREA?**

The Moro Rock/Crescent Meadow road was constructed for use by horse-drawn wagons in 1903. Today, it fails to accommodate busy day traffic flows. In addition, parking available along the road generally fails to meet peak day demand. As a result, many visitors park illegally along the road shoulder, damaging forest resources.

The result is a noisy, congested road that detracts from the beauty of the area it passes through and often fails to provide access for visitors due to lack of parking.

There is no public support for enlarging either the road or the parking areas, neither of which could be done without significant environmental impact.



The identified solution, which was supported by a strong majority of the persons who commented on the 1995 draft plan, is to close the road to private vehicles during the summer season and institute a public shuttle system.

During the shoulder seasons when traffic is not so intense, private vehicles will be allowed to drive to Moro Rock.

### **WHY IS IT APPROPRIATE TO ALLOW SHOULDER SEASON PRIVATE VEHICLE ACCESS TO MORO ROCK BUT NOT TO CRESCENT MEADOW?**

Private vehicle access to these areas requires parking, and the situations at the two areas are not the same.

Perpetuation of parking at Moro Rock does not face unsustainable challenges. The existing parking lot is outside the grove and when it is full, overflow parking naturally fills existing paved space on the one-way loop road passing through the parking area.

At Crescent Meadow, however, it is not possible to retain parking without continuing the accelerating damage this parking lot is inflicting on the natural environment, including Crescent Meadow itself.

The primary concern at Crescent Meadow is that the tree hazard management program required to protect the parking area removes trees along the edge of the meadow. In recent years dozens of large trees have been removed from this area.

The Park Service believes that the preservation of the forest surrounding Crescent Meadow is more important than providing direct access for private vehicles during a quiet time of the year.

### **WHY WEREN'T MORE AREAS DESIGNATED FOR BICYCLE USE?**

In the Giant Forest/Lodgepole area continuous rights-of-way for bicycle use do not currently exist, and their construction would require environmental impacts for which public support is not present.

During the planning process attention was given to the question of providing a dedicated bicycle path from Lodgepole to Giant Forest Center, but despite the presence of fragments of abandoned old road grade between the two points, no fully practical route was located that did not require extensive new construction and disturbance.

In addition, it was concluded by the planning team that bicycling was not an essential element of being able to see the grove. With all points in Giant Forest falling within a 3-square-mile block, the area is not big enough to sustain or require large numbers of bicycles.

## WHY CAN'T THE 1980 *DEVELOPMENT CONCEPT PLAN* BE IMPLEMENTED COMPLETELY AT THIS TIME?

This plan implements all major aspects of the 1980 *Development Concept Plan* except one — the construction of a 1,700-vehicle staging area at Wolverton and the closely related implementation of a large-scale shuttle system capable of moving all visitors who wish to see Giant Forest from the staging area to the forest.

These items were deferred from the plan owing to their high cost. Estimates for implementing these actions exceed \$40 million. The direct cost of keeping parking in the Giant Forest Center area and implementing only a much smaller scale shuttle system is less than \$10 million. (Both plans have more than \$10 million in other costs).

Ultimately the National park Service still intends to implement the 1980 plan and will do so when funding becomes available.

## HOW DOES THIS *INTERIM MANAGEMENT PLAN* DIFFER FROM THE 1980 *DEVELOPMENT CONCEPT PLAN* IN THE SHORT TERM?

The primary difference in the short term between the this plan and the 1980 *Development Concept Plan* is that the *Interim Management Plan* does not rely on a shuttle system to move all visitors in the grove; instead, parking is developed at Giant Forest Center and lower Wolverton, which will allow many visitors to walk to popular features. The shuttle system proposed is smaller, simpler, and will be user funded. The other significant change is to increase visitor emphasis on the Round Meadow/Hazelwood area and reduce it in the Crescent Meadow area.

## DOES THE *INTERIM MANAGEMENT PLAN* MAKE ANY PERMANENT CHANGES TO THE 1980 *DEVELOPMENT CONCEPT PLAN*?

The *Interim Management Plan* makes the following permanent changes to the 1980 plan — they are not believed to be major:

- The 55 nonsummer parking places to be retained permanently Giant Forest Center are moved across the street to upper Kaweah instead of being directly in front of the Giant Forest museum. This was done to improve the setting of the museum and reduce long-term impacts on the specimen-quality Sentinel Tree.
- Private vehicle shoulder season access will not be allowed to Crescent Meadow and the existing parking area at that site will be removed. This change was made in response to accelerating natural resource damage at the site related to continued use of the parking area.
- The lower Wolverton site is being developed for parking to serve the Sherman Tree. This moves up to 300 parking spaces to this site from the site of the staging area proposed in the 1980 plan that is 0.25-mile away. This was done to facilitate visitors walking to the General Sherman Tree rather than relying on a shuttle system.

- The Puzzle Corner/Round Meadow road is removed and its right-of-way restored, although the 1980 plan called for keeping this road to serve as a shuttle route. The road is being removed to enhance Round Meadow as an interpretive feature.
- Pinewood will be converted to a picnic area rather than being restored to an undeveloped state. This is being done to provide a picnic area that does not compete for parking with other sites and because upper Wolverton has not provided quality picnicking experiences over the past 15 years.



## **APPENDIXES / BIBLIOGRAPHY / PREPARERS**



## APPENDIX A: FINDING OF NO SIGNIFICANT IMPACT, GIANT FOREST INTERIM MANAGEMENT PLAN, SEQUOIA NATIONAL PARK

### PROPOSED ACTION

The National Park Service proposes to undertake a range of actions needed to implement the 1980 *Giant Forest/Lodgepole Development Concept Plan/Environmental Impact Statement*. Full implementation of the 1980 plan is the long-term goal for the National Park Service. The actions proposed in the *Giant Forest Interim Management Plan* are needed to address existing management issues and to eventually reach the overall goal of restoration of the Giant Forest as defined by the 1980 plan. The project area is referred to as “Giant Forest,” a 3-square-mile area in Sequoia National Park, Tulare County, California.

Specifically, the actions proposed in this plan are as follows:

#### Roads and parking

The Generals highway will continue to provide access through the grove in its present form. The Moro Rock/Crescent Meadow road will be converted to a shuttle-only route during peak visitation season. The Round Meadow/Puzzle Corner road will be closed and removed, as will the abandoned road system in the old campgrounds north of Puzzle Corner. An existing service road will be improved to provide visitor access to new parking at lower Wolverton.

The lodging shuttle and day use shuttle will be phased to ultimately reach the goals of the 1980 plan. The upper and lower Kaweah areas will be reconstructed and enlarged after buildings are removed for day use parking. New parking will be provided at lower Wolverton for shuttle users. Existing parking at Sherman Tree, Crescent Meadow, and Tunnel Log will be removed. The Pinewood picnic area will have parking for newly constructed picnic sites.

#### Trails

The overall system of trails connecting features in Giant Forest will be retained. At Giant Forest Center a system of fully accessible trails will be developed connecting the museum, parking, and Round Meadow/Hazelwood area. The Trail for all People will be improved and incorporated into a system of interpretive trails near Round Meadow. Trail access to the Sherman Tree will be developed from the lower Wolverton parking area along an existing corridor. Other existing roads, campground loops, and trail segments will be further studied for inclusion into this system.

#### Backcountry Access

Trailhead parking at Crescent Meadow will be phased out and hikers can choose accessing Crescent Meadow via the shuttle or beginning their trip from Wolverton.

#### Access for Visitors with Disabilities

All new and renovated comfort stations will provide access for visitors with disabilities, all new and reconstructed parking areas will include designated spaces, and the shuttle system will be accessible to these visitors. Fully accessible interpretive trails will be constructed at the Sherman Tree, Crescent Meadow, and the Round Meadow/Hazelwood area. The museum will be accessible to visitors with disabilities.



## Winter Access

At Giant Forest Center winter parking will be maintained for about 100 sites in the upper Kaweah area; the lower Kaweah area will be closed in winter. Winter parking will be maintained at the General Sherman Tree and lower Wolverton as needed. Snow play will continue at Wolverton and the parking area there will be plowed.

## Interpretation

The Giant Forest market building will be utilized as a visitor contact station and museum. Exhibits will be placed at key trailheads, shuttle stops, and focus areas to provide orientation and information about the giant sequoias and surrounding ecosystem, as described in the 1996 *Interpretive Prospectus*. Interpretive exhibits will be placed along the self-guiding Round Meadow trail system and along the trail to Sherman tree from the lower Wolverton parking area.

## Picnicking

Picnic sites at Wolverton and Crescent Meadow will be phased out and a new picnic area at Pinewood will be constructed.

## Ecological Restoration

The 1995 *Draft Guidelines for Ecological Restoration* will be implemented. The total area to be restored is about 60 hectares (150 acres). Restoration of the lower Kaweah parking area and a portion of the upper Kaweah parking area will not occur until the 1980 *Development Concept plan* is fully implemented at an undetermined future date. Wetlands restoration will occur where parking areas are removed at Round Meadow and Giant Forest Lodge.

## Cultural Resources

With the exception of the Giant Forest market, comfort station, and ranger residence, all identified historic buildings in the Giant Forest Village/Camp Kaweah, and Giant Forest Lodge historic districts will be removed. Removals will be completed under the provisions of a memorandum of agreement between the California State Historic Preservation Office and the National Park Service. Rehabilitation of remaining structures will also be in accordance with this agreement, the 1989 *Historic Structures Report*, and the *Cultural Resource Management Guideline* (NPS-28). Other national register properties, including Squatter's Cabin, Castle Cabin, Tharp's Log, and the Moro Rock steps will be retained and protected. Archeological testing will be done prior to any ground disturbing activities.

## Water and Wastewater Treatment

Existing water and wastewater lines no longer needed will be capped and left in place. Portions or all of the lines at Deer Creek will be removed and the area restored. The existing water system from Wolverton to the Pinewood tank will continue to supply potable water within Giant Forest. Closure of the existing Giant Forest wastewater treatment facility will be accomplished in 1998. A septic tank will be constructed near the market and a leachfield in the lower Kaweah area. Similar systems will be constructed to serve the lower Wolverton area, Pinewood picnic area, and potentially the Round Meadow/Hazelwood area.

## WHY THE PROPOSED ACTION WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

The National Park Service conducted an environmental assessment in July 1995 analyzing the effects of three alternatives. Alternatives analyzed included (1) concentrating visitor use within Giant Forest and developing parking at Sunset Rock, (2) dispersing visitor use throughout a number of areas by utilizing a higher degree of shuttle service, and (3) a no-action alternative. The proposed action selected elements from the range of alternatives to best implement the goals of the 1980 *Development Concept Plan*.

The proposed action as defined above will primarily involve removal of existing buildings, parking areas, and construction of new parking, access roads, and trails within existing disturbed areas. No sequoia trees will be removed in any of the actions proposed.

No adverse impact on visitor experience is anticipated except for those visitors who are inconvenienced by increased reliance on the shuttle system. Some peak visitation periods will cause short-term, increased congestion at the Kaweah parking areas. Overall, visitors will benefit from easier access to focus areas and improved interpretation and services.

No significant impacts on air quality, water quality, vegetation, or wildlife will occur as the result of this project. There will be no adverse effect on any wetlands or floodplains. Construction or reconstruction of several miles of trails and roads will result in minimal disturbance. Trails and roads will follow existing disturbed corridors or topographic contours to minimize grading. New trail segments will be routed to prevent disturbance of sensitive areas.

The Park Service conducted a biological inventory of the project area. The long-eared myotis bat (*Myotis evotis*) is a candidate for category 2 listing and is found in some buildings to be removed. Building removal will be scheduled to avoid the breeding season. No other plant or animal species of concern will be affected. Additional surveys will be conducted in the Wolverton area during the design phase.

Removal of historic properties will be completed according to stipulations of the memorandum of agreement with the California State Historic Preservation Office. Adaptive use of remaining buildings will not have an adverse effect. No impacts are anticipated on archeological resources; additional surveys will be conducted as needed prior to construction. Should previously unknown resources be uncovered during construction or inadvertent impact or exposure of a known archeological site occur, work will be stopped in the project area and the Park Service will follow the provisions of 36 CFR section 800.11 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990.

## PUBLIC AVAILABILITY

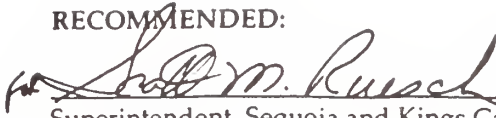
The environmental assessment for this project was released for public comment in July 1995. The comment period ended on September 22, 1995. Park staff presented the alternatives to park visitors and workshops were held in surrounding communities. Native American tribes and representatives in the area were requested to comment on the plan. A questionnaire was provided with the draft plan to elicit public input. Comments received were supportive of concentrating use and visitor focus within the grove and using a shuttle system to meet the objectives of the 1980 *Development Concept Plan*. The public, however, was generally against parking at Sunset Rock to achieve these goals.

## DETERMINATION

On the basis of the information contained in the environmental assessment, as summarized above, and mitigating measures to be employed (see mitigation matrix below), it is the determination of the National Park Service that the proposed project is not a major federal action significantly affecting the quality of the human environment. Nor is the proposed action without precedent or similar to one that normally requires an environmental impact statement. Therefore, in compliance with the National Environmental Policy Act, an environmental impact statement will not be prepared.

Impact	Prescribed Mitigation and Responsibility
<ol style="list-style-type: none"> <li>1. Proposed action will restore 150 acres in Giant Forest. Building removal will require minimal grading. Road, trail, and parking reconstruction will occur in previously disturbed areas.</li> <li>2. No sequoia trees will be removed; design of parking areas and roads will avoid critical root zones.</li> <li>3. Building to be removed potentially contain long-eared bats (a candidate species).</li> <li>4. Wetlands restoration will occur in parking and trail areas to be reconstructed or removed.</li> <li>5. Comfort stations and leachfields will be built to serve visitors in Giant Forest.</li> <li>6. Hazardous materials will be removed during building deconstruction.</li> <li>7. Historic buildings will be removed.</li> </ol>	<ol style="list-style-type: none"> <li>1. The 1995 <i>Draft Guidelines for Ecological Restoration</i> will be implemented. A stormwater pollution prevention plan will be developed and permits obtained (Denver Service Center). Sediment traps, erosion checks, and filters will be used to control erosion during construction (contractor).</li> <li>2. Critical root zones that could be affected will be identified and marked before construction (park and project supervisor).</li> <li>3. Buildings will be removed outside the maternity period of species (contractor and project supervisor).</li> <li>4. Necessary clearances and permits from the U.S. Army Corps of Engineers will be obtained by the Denver Service Center prior to any activities in a wetland. A wetland survey will be conducted in the Wolverton project area by the Denver Service Center. A sensitive plant survey will be conducted by the Denver Service Center in the Wolverton project area during design.</li> <li>5. Design and placement will meet water quality standards established by the California Water Quality Control Board (Denver Service Center).</li> <li>6. Hazardous materials will be remediated before or during removal (contractor and project supervisor).</li> <li>7. Buildings will be removed in accordance with provisions of the memorandum of agreement between the Park Service and the California State Historic Preservation Office. Adaptive use of remaining structures will also be in accordance with the memorandum of agreement. No adverse effects on archeological resources are anticipated; however, should unknown resources be uncovered during construction, work would be stopped in the discovery area and the Park Service will follow provisions of 36 CFR 800.11, the "monitoring and discovery plan" of the memorandum of agreement, and as appropriate, provisions of the Native American Graves and Repatriation Act (project supervisor and contractor).</li> </ol>

RECOMMENDED:



MAR 05 1996

Superintendent, Sequoia and Kings Canyon National Park, DATE

APPROVED:



MAR 27 1996

Field Director, Pacific West Field Office, DATE

## APPENDIX B: GIANT FOREST COST SUMMARY

CONSTRUCTION AREA	COST
<b>Removal and Restoration</b> in areas without future visitor facilities: Bearhill Road, Castle Rock, Deer Creek, Firwood, Hazelwood, Highland, Lodge, Paradise, power line trunk, Puzzle Corner road, Sugar Pine, Sunset Camp, Sunset Rock, treatment plant	\$4,226,000
<b>Crescent Meadow/Moro Rock</b> — shuttle stop, comfort stations, trail improvements, removal and restoration	\$565,000
<b>Giant Forest Center</b> — museum, parking for visitors with disabilities, trail improvements, renovate comfort station, renovate ranger residence, remove other facilities, restoration	\$2,052,000
<b>Lower Kaweah</b> — parking, road improvements, trails, removal of structures, comfort station, restoration	\$2,378,000
<b>Lower Wolverton</b> — parking, road improvements, comfort station, trails, utilities	\$4,519,000
<b>Pinewood</b> — picnic sites, parking, comfort station, utilities, removal of facilities	\$1,097,000
<b>Round Meadow</b> — improve fully accessible trail, parking for visitors with disabilities, comfort station, removal and restoration	\$723,000
<b>Sherman Tree</b> — parking for visitors with disabilities, shuttle stop, realign Generals Highway, fully accessible trail, comfort station, removal and restoration	\$1,524,000
<b>Trails</b> — improve routes, signs, and accessibility throughout Giant Forest	\$2,286,000
<b>Upper Kaweah</b> — parking, road improvements, trails, removal of structures, restoration	\$1,760,000
<b>SUBTOTAL CONSTRUCTION:</b> Costs are in 1996 dollars and include 31% for construction contingency and project supervision	\$21,130,000
<b>Interpretation</b> — wayside exhibits, museum exhibits, audio-visual production and equipment	\$1,328,000
<b>GRAND TOTAL:</b>	\$22,458,000



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## PREPARERS AND CONSULTANTS

### PREPARERS

#### Denver Service Center

Kevin Percival, Team Captain/Landscape Architect  
Suzanne Stutzman, Landscape Architect  
David Lee, Natural Resource Specialist  
Heather Todd, Natural Resource Specialist  
Susan Spain, Landscape Architect  
Bryan Hooks, Landscape Architect  
Suzann Essman, Landscape Architect  
Harlan Unrau, Cultural Resource Specialist

#### Sequoia National Park

William Tweed, Chief of Park Planning and Concessions Management

### CONSULTANTS

#### Sequoia National Park

Michael J. Tollefson, Superintendent  
Scott Ruesch, Chief of Park Maintenance  
Larry Waldron, Chief Park Interpreter  
Larry Bancroft, Chief of Science and Natural Resources Management  
Ellen Seeley, Interpretive Specialist  
Jeff Manley, Natural Resources Management Specialist

#### Western Regional Office

Ray Murray, Chief, Planning

#### Denver Service Center

Linda Moery, Section Chief, Landscape Architecture and Planning  
Sarah Bransom, Section Chief, Compliance  
Rocky Kloster, Visual Information/GIS Specialist  
Peter Budde, Visual Information/GIS Specialist  
Frank Williss, Historian  
Jon Nickolas, Writer/Editor





As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



